

NOTICE

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**SOURCE REMOVAL
ACTION
PRELIMINARY
INVESTIGATION
FOR RYAN'S PIT
(TRENCH T-2)
REMEDiation**

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
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August 28, 1995

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**Source Removal Action Preliminary Investigation
For Ryan's Pit (Trench T-2) Remediation**

**Operable Unit 2
Individual Hazardous Substance Site 109**

Rocky Mountain Remediation Services

August 28, 1995

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1.0 INTRODUCTION

1.1 Purpose

This document summarizes the investigation activities conducted to support the source removal action to be implemented at Ryan's Pit (Trench T-2 or Individual Hazardous Substance Site [IHSS] 109). The sampling and analysis activities described herein were to achieve the following two objectives.

Objective 1: confirm the presence of high hydrocarbon concentrations meeting or exceeding Programmatic Preliminary Risk-Based Remediation Goals (PPRGs) for the Subsurface Soil Construction Worker Scenario, presented in Table 1.1.

Objective 2: verify the trench boundaries of IHSS 109 needed for the purpose of excavating the hydrocarbon impacted soil.

This investigation was conducted under the Sampling and Analysis Plan for Ryan's Pit (Trench T-2) Remediation, Preliminary Sampling Activities, Operable Unit 2, Individual Hazardous Substance Site 109 (July 31, 1995) and the Addendum #1 To The Trenches and Mound Site Characterization Health and Safety Plan, Operable Unit No. 2, (July and August, 1995). The source removal action will be conducted under the approved Final Proposed Action Memorandum for the Remediation of Trench T-2: Operable Unit 2. Final approval of this document is expected to be received by September 1, 1995.

1.2 Background

Operable Unit 2, Trench T-2, Individual Hazardous Substance Site (IHSS) 109 was used from approximately 1966 through 1971 to dispose of nonradioactive liquid chemicals. The organic chemicals, disposed in small quantities, included tetrachloroethylene (PCE), trichloroethylene (TCE), and possibly diesel fuel. Other materials that were disposed in the trench included paint thinner and small quantities of construction related materials.

Sampling locations were selected using the existing site characterization data from the Trench and Mound Site Characterization conducted in May 1995, the Soil Vapor Survey of IHSS 109 conducted in Winter 1993, and the Remedial Investigation completed in 1992 to achieve Objective 1. Sampling locations were also used to evaluate the trench boundaries to achieve Objective 2. The estimated boundaries of Trench T-2 were located by survey in the field on the basis of the Electromagnetic (EM) data generated during the Remedial Investigation. Soil boring and soil gas locations were referenced off of the four staked corner posts for this investigation. Staked locations for borings 13295 and 13395 were also used as reference points.

1.3 Scope of Work

The scope of work for this investigation was described in detail in Sampling and Analysis Plan (SAP) and is summarized below for the two objectives.

Objective 1

- . Collect soil samples from four to ten small diameter boreholes to a depth of 10 feet.
- . Select soil grab samples of discrete intervals in the field based on the results of existing characterization data and on the discretion of the field geologist.
- . Analyze soil samples by Target Compound List-Volatile Organic Screening methodology at the on-site 881 Building Laboratories on a twenty four hour expedited turnaround time period. Collect duplicate and equipment blank (rinse) samples at a ratio of one per ten real samples. A radionuclide screen will be collected for each sample.
- . If additional boreholes are required, based on the decision of Rocky Mountain Remediation Services (RMRS) and Kaiser-Hill, the field geologist will select additional boring locations. If specific organic compounds above PPRGs are encountered sampling will be terminated.
- . Collect a sample of nonaqueous phase liquid product (NAPL) if encountered during the soil gas survey or the borehole drilling for analysis.

Objective 2

- . Soil gas samples will be collected from locations within and outside the estimated trench boundaries based on previous site characterization results. Soil gas sampling will be completed using a micro-sampling probe driving system to collect samples at approximately three, six, and ten feet or immediately above ground water (whichever is encountered first).
- . A preliminary screening analysis of the soil gas sample will be performed using a Photoionization Detector (PID) If levels exceed approximately 1000 ppm, a follow up quantitative analysis will be conducted using a Gas Chromatograph (GC) instrument that will be calibrated for the organic compounds of concern (primarily PCE, TCE, and 1,1,1-Trichloroethane [TCA]).
- . Soil gas sampling locations will be aligned two feet in from the existing staked trench boundary and sampling shall be stepped out five to ten feet from the last sample collected if field results indicate additional sampling is required.
- . Thirty percent of the soil gas samples, along with the required QA/QC soil gas samples (one in ten), will be sent to an off-site laboratory for analysis in order to confirm the field results.
- . Prepare a written report summarizing all findings and analytical results for submittal to Kaiser-Hill.

2.0 FIELD INVESTIGATION

Field investigation activities conducted to meet the two objectives are described below. All field activities were conducted in accordance with applicable Operating Procedures as described in the SAP.

2.1 Objective 1, Soil Sampling

The original scope of Objective 1, to confirm the presence of high hydrocarbon concentrations exceeding the PPRGs, was modified in the field slightly from the locations described in the SAP as shown in Figure A for the initial ten borehole locations. Field soil boring activities were completed in the following sequence for a total of 13 borings as shown in Figure A.

Initially four locations were drilled (70195 through 70495) as shown in Figure A, along the southern border of Trench T-2. The soil gas survey was then performed (Section 2.2). Upon completion of the soil gas survey, a decision was made to twin the existing borehole 13395 and a previous soil gas sample location 109-04 where existing site characterization data indicated hydrocarbon contamination (locations 70595, 70695, and 70795 as shown on Figure A). Boring 70695 was completed as a twin of 70595 due to the lack of sample recovery from the soil zone underlying the water/liquid observed in boring 70595. Upon completion of these three boreholes a decision was made to use borehole soil samples to confirm the lateral extent of Trench T-2 with borehole locations 70895, 70995, 71095, 71195, 71295, and 71395 as shown in Figure A.

In summary thirteen small diameter boreholes (1 to 1.5 inch diameter) were drilled using a micro-sampling hydraulic drive system (Geoprobe) as described in the SAP. The core was examined visually for evidence of hydrocarbon contamination and logged in accordance with GT.01 "Logging of Alluvial and Bedrock Material". Small diameter boreholes were abandoned using granular bentonite and deionized water. Twenty-six grab soil samples of discrete intervals which indicated possible hydrocarbon contamination (observed soil staining/discoloration, PID readings) were collected for analysis. Three duplicate soil samples and three equipment blank (rinse) samples were also collected.

Three water/liquid grab samples were collected. The first two samples from locations 70395 (depth of 4.5-5.0) and 70595 (depth of 2.9-3.5 feet) were collected using a peristaltic pump per GW.06, "Groundwater Sampling". The third water/liquid sample was collected directly from the 1.5 inch diameter sample core tube from location 70695 during the collection of soil samples BH00076GA and BH00077GA, and was encountered on top of the sediments.

Photoionization detector measurements were collected from different intervals along the core and occasionally in the ambient temperature headspace (ATH) methodology. Table 2.1 presents the field readings with the corresponding sample number and depth interval. This sampling was used to identify elevated levels of VOC contamination and shall not be analyzed quantitatively. PID results are included within this summary to indicate areas where high VOC contamination areas may be encountered during excavation activities.

2.2 Objective 2, Soil Gas Sampling

The original scope of Objective 2, to confirm the lateral extent of hydrocarbon contamination, was modified in the field as described in the SAP for the initial twelve soil gas locations. Field soil gas sampling activities were completed in the following sequence for a total of eight soil gas locations as shown in Figure A.

The second objective was partially achieved by collecting nineteen soil gas samples from eight soil gas locations placed in a grid two feet inside the boundary of Trench T-2 (Figure A). Based on the results of the initial Photoionization Detector (PID) and from confirmatory laboratory GC/MS analyses, additional soil gas survey locations were not selected.

Eight soil gas locations were drilled (SG000195-SG00495 and SG000995-SG001295) using a micro-sampling probe hydraulic drive system (Dynamic Sampling methodology) the SAP. Soil gas samples were collected at 3 feet, 6 feet, and 9 feet from the first location SG001095 with poor to no recovery results. A field decision was made to limit the soil gas sampling to depth of 3 and 6 feet or immediately above ground water (whichever is encountered first). A PID measurement was performed at each interval and only two soil gas samples were collected for analysis based on the PID readings. The two soil gas samples were collected from locations SG000495 and SG000295 at a depth 3 feet below ground surface (BGS). Soil gas sample recovery was poor due to the tight clay encountered, therefore locations SG000595-SG000895 along the north side of Trench T-2 were dropped from the investigation. A decision was then made to replace the soil gas survey with additional small diameter boreholes located within and outside of the Trench T-2 boundaries to verify the area requiring source removal by excavation as described in Section 2.1.

3.0 PHYSICAL CHARACTERISTICS OF TRENCH T-2

Soil cores collected as part of the field investigation were logged for soil properties and are included as Appendix A. Borings 70195 through 70695 appear to be located within Trench T-2. Borings 70795 through 71395 appear to be located around the perimeter of Trench T-2. The following presents a summary of the subsurface hydrogeology observed during the investigation.

Six borings, 70195 through 70695 as shown in Figure B, appear to be located within Trench T-2 with the subsurface characterized as follows. From ground surface to a depth of two to three feet, the soils encountered are primarily a sandy clay with some gravel, dry to damp, slightly plastic to nonplastic, with roots. At a depth from two to five feet, the borings encountered a clay which is soft to very soft, moist to wet, and very plastic. Cavities or voids were encountered in borings 70195 (at 2.5 and 4.0 feet BGS), 70595 (2.9-3.5 feet BGS), 70695 (3.0-4.0 feet BGS), and SG000395 (at 3 feet BGS). A thin hard possibly polyacrylic plastic was observed in boring 70395 from 4.3 to 4.7 feet BGS and may have been encountered in boring 70495 at a depth of 5.0 feet and in soil gas locations SG000295 and SG000195 at a depth of 4.5 feet. Groundwater appears to be perched on top of the underlying claystone bedrock and appears as a thin saturated zone from approximately 3 to 5 feet BGS. Claystone bedrock was encountered in the trench at a depth of approximately 5 to 6 feet BGS (with the exception of 70195 where claystone was observed at 8 feet BGS). The claystone is described as soft, moist to damp, strongly weathered to weathered, blocky, with vertical iron oxide and gray stained fractures.

Seven borings, 70795 through 71395 as shown in Figure B, appear to be located around the perimeter of Trench T-2 with the subsurface characterized as follows. From ground surface to a depth of approximately four feet, the soils encountered are primarily a sandy clay with some gravel and clay interbeds, dry to damp, slightly plastic to nonplastic, with roots. A thin sand zone was observed in 70895 from 2.5 to 3 feet BGS. Groundwater appears to be perched on top of the underlying claystone bedrock and appears as a thin saturated zone from approximately three to five feet BGS. No groundwater was observed in borings 70995, 71095, 71195, and 71395. Therefore, the eastern area outside of Trench T-2 does not appear to have perched groundwater. Claystone bedrock was encountered in the trench at a depth of approximately four to six feet BGS. The claystone is described as soft, moist to damp, strongly weathered to weathered, blocky, with vertical iron oxide and gray stained fractures.

4.0 ANALYTICAL RESULTS

4.1 Analytical Methodology

In order to confirm the presence of hydrocarbons above the PPRGs within the trench boundaries and to verify the lateral extent requiring excavation, 13 boreholes and eight soil gas locations were drilled. The number and types of samples collected are summarized below in Table 4.1.

Soil samples were initially analyzed by a volatile organic screening method. The volatile organic compound (VOC) Screening Method used a Purge and Trap Gas Chromatography/Mass Spectrometry. Approximately one gram of sample was purged and analyzed. Because a screening method was used, the results are estimated quantitations and could be off by up to five orders of magnitude. According to the laboratory, it can be assumed that detection limits for this method are in the low (5-15) parts per billion range. After review of the initial sampling results and consultation with the laboratory, RMRS personnel determined that volatile organic compound analyses using the contract laboratory procedure (CLP) would be a more method to achieve the objectives of this investigation. The CLP, which is equivalent to SW-846 Method 8240, was adopted for the remaining sample analyses. Results of both sampling methods are reported in Section 4.2, Soil and Liquid Analytical Results.

The total number of soil gas samples collected was reduced to 21 based on the subsurface conditions encountered. Out of the seventeen sampling intervals, only twelve intervals yielded soil gas volumes in excess of 200 ml. Purge times to evacuate the sample probe and tubing ranged from 30 seconds up to 35 minutes. The soil gas survey was abandoned after the first eight sampling locations because the initial results of the survey indicated that the data would not provide adequate information to achieve objective 2. As part of the soil gas methodology, the photoionization detector was calibrated to 100 parts per million (ppm) isobutylene on a daily basis.

Two soil gas samples were analyzed by a gas chromatograph. Approximately 250 ml of soil gas were placed into a 1 liter Tedlar bag using both high and low volume sampling techniques to purge the line and to collect the samples. Samples were then shipped to Golder Federal Services in Seattle Washington for analysis. Soil gas samples were analyzed within the scope of EPA Method 8010 for chlorinated hydrocarbons and 8020 for volatile organic compounds.

4.2 Soil and Liquid Analytical Results

Figure B and Table 4.2.1 presents the results of the volatile organic screening methodology. Figure C and Table 4.2.2 presents the results of the volatile organic analysis using the CLP methodology. The most common contaminants detected in the soil include 1,1-dichloroethane (1,1-DCA), 1,1,1-trichloroethane (TCA), trichloroethene (TCE), and tetrachloroethene (PCE). The highest volatile organic concentrations were observed in boreholes 70595 and 70695, located adjacent to borehole 13395. The highest detected concentrations observed in the subsurface soil samples for PCE range between 25,000 mg/Kg at 5.0-5.5 feet to 6,800 mg/kg at 3.5-3.6 feet in 70595, and for TCA between 11,000 mg/kg at 5.0-5.5 feet to 915 mg/kg at 3.5-3.6 feet in 70595.

Liquid samples were collected from boreholes 70595 and 70695 to establish if NAPL was present within Trench T-2. The liquid sample BH00074GA from borehole 70595 was nearly 40 percent NAPL (Table 4.2.2).

4.3 Soil Gas Survey Results

The photoionization detector results from the eight soil gas sample locations are presented in Table 4.3.1. Because of the tightly bound clays and areas with perched groundwater observed in the Trench T-2 area, recovery of soil gas samples was very difficult. The results of the two soil-gas chromatograph analyses are presented in Table 4.3.2.

5.0 CONCLUSIONS

Hydrocarbon concentrations meeting or exceeding the PPRGs appear to be limited to a volume of approximately 3 cubic yards. This volume is estimated based on an approximate 3 foot thickness (from 3 to 6 feet BGS) by 25 square feet. The areal extent of 25 square feet is based on assuming an impacted area extending 2.5 feet around boreholes 13395, 70595, and 70695. High concentrations, greater than 100 mg/Kg but less than 1,000 mg/Kg, are observed in downgradient borehole locations 70795 (5.5-6.0 feet BGS) and 70995 (7.1-7.75 feet BGS) south and southeast of borehole locations 13395, 70595, and 70695 and outside of the trench boundary. Location 70995 has PCE with a concentration of 690 mg/Kg. It appears that contamination has moved downgradient to the south and southeast, vertically and horizontally, along the alluvial bedrock contact and within the claystone bedrock. Contaminants are still detected with lower concentrations, less than 100 but with more than 1 mg/Kg, to the southwest (locations 70195 and 70895) and to the east and southeast (locations 70395, 70495, 70295, 70995, and 71095). Hydrocarbon concentrations less than 1 mg/Kg were observed at locations 71195, 71295, and 71395 which indicate that these locations are outside of the trench and the area of the contaminant plume.

Table 1.1 presents the PPRGs for Trench T-2 based on the following document; Programmatic Risk-Based Preliminary Remediation Goals, U.S. Department of Energy, Rocky Flats Environmental Technology Site, Golden, Colorado, Final, Revision 2, dated February 1995. A

PPRG has not been calculated for TCA at this time. Based on the results of this investigation it is recommended that soils containing hydrocarbon concentration that meet or exceed the PPRGs, specifically PCE, be excavated and treated. As part of this action to further reduce the source of groundwater contamination, it is advisable that the excavation also remove soils containing hydrocarbon concentrations greater than 100 mg/kg PCE.

Tables

&

Figures

Table 1.1
Programmatic Preliminary Risk-Based Remediation Goals

Constituent of Concern	Construction Worker, Subsurface Soil / (mg/kg)
1,1,1-TCA	not calculated
TCE	5440
PCE	2220
Toluene	125,000
Ethylbenzene	151,000
1,2-DCE	16,000
1,1-DCE	16,000
1,1-DCA	57,300
Xylene	1,000,000

1. From Table 26 for Construction Worker-Subsurface Soil, Programmatic Risk-Based Preliminary Remediation Goals, U.S. Department of Energy, Rocky Flats Environmental Technology Site, Golden, Colorado, Final, Revision 2, dated February 1995.

Table 2.1
Field Observations-Soil Boreholes

Location	Sample Number	Depth	Observed PID Reading (ppm)
70195	BH00051GA	4.0-4.5	24
70295	BH00052GA	2.0-2.25	68
	BH00053GA	4.0-4.7	221
	BH00054GA	5.0-5.6	519
	BH00055GA	6.0-6.6	95.2
	BH00056GA	7.56-8.2	129
	BH00057GA	7.56-8.2	129
	BH00058GA	7.0-8.4	129
	BH00059GA	9.15-9.45	115
70395	BH00060GA	4.2-4.4	68
	BH00061GA	4.5-5.0	30
	BH00062GA	5.0-5.7	786
	BH00063GA	6.5-6.8	292
	BH00064GA	7.0-7.4	132
	BH00065GA	8.5-9.0	322
	BH00066GA	9.55-9.9	30
70495	BH00067GA	4.0-4.35	869
70595	BH00074GA	2.9-3.5	902
	BH00075GA	3.5-3.6	328
70695	BH00076GA	5.0-5.5	509
	BH00077GA	5.5-6.0	509
	BH00078GA	5.0-6.0	509
70795	BH00079GA	5.5-6.0	507
70895	BH00080GA	7.55-7.9	17
70995	BH00081GA	7.1-7.75	3
71095	BH00083GA	7.3-7.6	0
71195	BH00084GA	7.1-7.75	21
71295	BH00085GA	6.0-6.5	0
71395	BH00087GA	7.2-7.7	14

Table 4.1
Summary of Analytical Sampling

Samples Type	No. of Samples
VOC Screen, Real	17
Duplicate	2
Equipment Rinsate	2
VOC-CLP, Real	18
Duplicate	1
Equipment Rinsate	1
Soil Gas, total	21
GC analysis	2
Trip and Method Blank	2
PID Measurements	17

Table 4.2.1
Volatile Organic Compound Screening Method

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00051GA	70195	4.0-4.6	Methylene Chloride	5.00E+01	ug/kg	soil
			Acetone	4.00E+02	ug/kg	soil
			1,1-Dichloroethane	2.40E+02	ug/kg	soil
			1,1,1-Trichloroethane	1.05E+03	ug/kg	soil
			Trichloroethene	6.70E+02	ug/kg	soil
			Tetrachloroethene	4.60E+02	ug/kg	soil
			Xylenes	8.50E+01	ug/kg	soil
BH00052GA	70295	2.0-2.25	Acetone	1.60E+04	ug/kg	soil
			1,1-Dichloroethane	7.00E+02	ug/kg	soil
			1,1,1-Trichloroethane	1.30E+03	ug/kg	soil
			Trichloroethene	2.00E+02	ug/kg	soil
			4-Methyl-2-Pentanone	3.00E+03	ug/kg	soil
			Tetrachloroethene	3.15E+02	ug/kg	soil
			Toluene	1.60E+03	ug/kg	soil
			Ethylbenzene	2.40E+02	ug/kg	soil
BH00053GA	70295	4.0-4.7	Acetone	1.50E+04	ug/kg	soil
			1,1-Dichloroethane	4.00E+02	ug/kg	soil
			1,1,1-Trichloroethane	1.80E+03	ug/kg	soil
			Trichloroethene	9.00E+02	ug/kg	soil
			4-Methyl-2-Pentanone	1.70E+03	ug/kg	soil
			Toluene	9.00E+02	ug/kg	soil
			Ethylbenzene	2.20E+02	ug/kg	soil
			Xylenes	9.00E+02	ug/kg	soil
BH00054GA	70295	5.0-5.6	Methylene Chloride	7.40E+02	ug/kg	soil
			Acetone	2.70E+04	ug/kg	soil
			1,1-Dichloroethane	2.10E+03	ug/kg	soil
			1,1-Dichloroethene	5.00E+02	ug/kg	soil
			1,1,1-Trichloroethane	6.00E+03	ug/kg	soil
			1,2-Dichloropropane	3.00E+02	ug/kg	soil
			Trichloroethene	3.00E+03	ug/kg	soil
			4-Methyl-2-Pentanone	4.00E+03	ug/kg	soil
			Tetrachloroethene	9.00E+02	ug/kg	soil
			Toluene	5.00E+03	ug/kg	soil
			Ethylbenzene	2.30E+03	ug/kg	soil
			Xylenes	8.00E+03	ug/kg	soil
BH00055GA	70295	6.0-6.6	Methylene Chloride	4.30E+02	ug/kg	soil
			Acetone	3.90E+03	ug/kg	soil
			1,1-Dichloroethane	1.40E+02	ug/kg	soil
			1,1,1-Trichloroethane	3.20E+02	ug/kg	soil
			Trichloroethene	1.40E+02	ug/kg	soil
			4-Methyl-2-Pentanone	2.70E+03	ug/kg	soil
			Toluene	1.90E+02	ug/kg	soil
			Xylenes	1.40E+02	ug/kg	soil
BH00056GA	70295	7.56-8.2	Methylene Chloride	1.20E+03	ug/kg	soil
			Acetone	1.40E+04	ug/kg	soil
			1,1-Dichloroethene	2.40E+02	ug/kg	soil
			1,1-Dichloroethane	3.80E+02	ug/kg	soil
			1,1,1-Trichloroethane	2.30E+03	ug/kg	soil
			Trichloroethene	1.50E+03	ug/kg	soil
			4-Methyl-2-Pentanone	3.30E+03	ug/kg	soil
			Tetrachloroethene	1.60E+02	ug/kg	soil

Table 4.2.1
Volatile Organic Compound Screening Method

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00056GA	70295	7.56-8.2	Toluene	1.90E+03	ug/kg	soil
			Ethylbenzene	7.60E+02	ug/kg	soil
			Xylenes	2.60E+03	ug/kg	soil
BH00057GA (Duplicate of BH00056GA)	70295	7.56-8.2	Methylene Chloride	2.00E+03	ug/kg	soil
			Acetone	2.70E+03	ug/kg	soil
			1,1-Dichloroethene	6.50E+02	ug/kg	soil
			1,1-Dichloroethane	3.70E+02	ug/kg	soil
			1,1,1-Trichloroethane	6.80E+02	ug/kg	soil
			Trichloroethene	7.00E+02	ug/kg	soil
			4-Methyl-2-Pentanone	2.30E+03	ug/kg	soil
			Tetrachloroethene	4.70E+01	ug/kg	soil
			Toluene	8.30E+02	ug/kg	soil
			Ethylbenzene	8.00E+01	ug/kg	soil
			Xylenes	4.00E+02	ug/kg	soil
BH00059GA	70295		Methylene Chloride	1.00E+03	ug/kg	soil
			Acetone	1.70E+03	ug/kg	soil
			1,1-Dichloroethene	5.00E+01	ug/kg	soil
			1,1-Dichloroethane	6.50E+00	ug/kg	soil
			1,1,1-Trichloroethane	1.00E+02	ug/kg	soil
			Trichloroethene	5.00E+01	ug/kg	soil
			4-Methyl-2-Pentanone	1.20E+03	ug/kg	soil
			Xylenes	3.50E+01	ug/kg	soil
BH00060GA	70395	4.2-4.4	Acetone	2.20E+02	ug/kg	soil
			1,1-Dichloroethane	4.00E+02	ug/kg	soil
			1,1,1-Trichloroethane	3.70E+03	ug/kg	soil
			Tetrachloroethene	1.30E+03	ug/kg	soil
			Toluene	5.00E+02	ug/kg	soil
			Ethylbenzene	7.00E+01	ug/kg	soil
			Xylenes	7.00E+02	ug/kg	soil
BH00061GA	70395	4.5-5.0	Methylene Chloride	4.20E+02	ug/kg	water
			Acetone	1.40E+02	ug/kg	water
			1,1-Dichloroethene	5.50E+02	ug/kg	water
			1,1-Dichloroethane	4.80E+03	ug/kg	water
			1,1,1-Trichloroethane	1.20E+04	ug/kg	water
			Trichloroethene	5.80E+02	ug/kg	water
			1,1,2-Trichloroethane	1.40E+02	ug/kg	water
			Tetrachloroethene	2.10E+03	ug/kg	water
			Toluene	2.60E+03	ug/kg	water
			Ethylbenzene	2.10E+02	ug/kg	water
BH00062GA	70395	5.0-5.7	Methylene Chloride	3.00E+02	ug/kg	soil
			Acetone	4.60E+02	ug/kg	soil
			1,1-Dichloroethene	1.25E+02	ug/kg	soil
			1,1-Dichloroethane	7.25E+02	ug/kg	soil
			1,1,1-Trichloroethane	4.60E+03	ug/kg	soil
			Trichloroethene	8.00E+02	ug/kg	soil
			1,1,2-Trichloroethane	8.00E+01	ug/kg	soil
			4-Methyl-2-Pentanone	1.35E+03	ug/kg	soil
			Tetrachloroethene	1.00E+03	ug/kg	soil
			Ethylbenzene	5.50E+02	ug/kg	soil

Table 4.2.1
Volatile Organic Compound Screening Method

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00062GA	70395	5.0-5.7	Xylenes	2.90E+03	ug/kg	soil
BH00063GA	70395	6.5-6.8	Methylene Chloride	7.00E+01	ug/kg	soil
			Acetone	3.60E+02	ug/kg	soil
			1,1-Dichloroethene	5.50E+01	ug/kg	soil
			1,1-Dichloroethane	6.50E+01	ug/kg	soil
			1,1,1-Trichloroethane	1.60E+03	ug/kg	soil
			Trichloroethene	1.40E+02	ug/kg	soil
			Tetrachloroethene	3.40E+02	ug/kg	soil
			4-Methyl-2-Pentanone	2.10E+03	ug/kg	soil
			Toluene	7.00E+02	ug/kg	soil
			Ethylbenzene	1.25E+02	ug/kg	soil
			Xylenes	7.50E+02	ug/kg	soil
BH00064GA	70395	7.0-7.4	Methylene Chloride	4.75E+02	ug/kg	soil
			Acetone	6.75E+02	ug/kg	soil
			1,1-Dichloroethene	4.60E+02	ug/kg	soil
			1,1-Dichloroethane	7.00E+02	ug/kg	soil
			1,1,1-Trichloroethane	8.50E+03	ug/kg	soil
			Trichloroethene	8.00E+02	ug/kg	soil
			Tetrachloroethene	4.70E+03	ug/kg	soil
			Toluene	4.00E+03	ug/kg	soil
			Ethylbenzene	1.50E+03	ug/kg	soil
			Xylenes	7.70E+03	ug/kg	soil
BH00065GA	70395	8.5-9.0	Methylene Chloride	1.90E+03	ug/kg	soil
			Acetone	3.45E+02	ug/kg	soil
			1,1-Dichloroethene	3.70E+02	ug/kg	soil
			1,1-Dichloroethane	1.20E+03	ug/kg	soil
			1,1,1-Trichloroethane	3.00E+03	ug/kg	soil
			Trichloroethene	1.00E+03	ug/kg	soil
			1,1,2-Trichloroethane	5.50E+01	ug/kg	soil
			4-Methyl-2-Pentanone	8.20E+03	ug/kg	soil
			Tetrachloroethene	3.00E+02	ug/kg	soil
			Toluene	3.40E+03	ug/kg	soil
			Ethylbenzene	3.50E+02	ug/kg	soil
			Xylenes	2.00E+03	ug/kg	soil
BH00066GA	70395	9.59-9.9	Methylene Chloride	5.20E+01	ug/kg	soil
			1,1-Dichloroethene	2.70E+01	ug/kg	soil
			1,1-Dichloroethane	4.30E+01	ug/kg	soil
			1,1,1-Trichloroethane	2.60E+02	ug/kg	soil
			Trichloroethene	3.60E+01	ug/kg	soil
			Tetrachloroethene	5.70E+01	ug/kg	soil
			4-Methyl-2-Pentanone	2.50E+01	ug/kg	soil
			Toluene	6.50E+01	ug/kg	soil
			Ethylbenzene	1.10E+01	ug/kg	soil
			Xylenes	1.55E+02	ug/kg	soil
BH00069GA	70495	6.4-6.8	Methylene Chloride	3.70E+01	ug/kg	soil
			Acetone	2.60E+01	ug/kg	soil
			1,1-Dichloroethene	5.50E+01	ug/kg	soil
			1,1-Dichloroethane	7.00E+01	ug/kg	soil
			1,1,1-Trichloroethane	1.20E+03	ug/kg	soil
			Trichloroethene	7.40E+01	ug/kg	soil
			4-Methyl-2-Pentanone	1.75E+02	ug/kg	soil
			Tetrachloroethene	2.20E+02	ug/kg	soil

Table 4.2.1
Volatile Organic Compound Screening Method

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00069GA	70495	6.4-6.8	Toluene	2.90E+02	ug/kg	soil
			Ethylbenzene	5.00E+01	ug/kg	soil
			Xylenes	3.25E+02	ug/kg	soil
BH00070GA	70495	7.35-8.0	Methylene Chloride	4.00E+02	ug/kg	soil
			Acetone	3.50E+02	ug/kg	soil
			1,1-Dichloroethane	4.00E+02	ug/kg	soil
			1,1,1-Trichloroethane	2.30E+03	ug/kg	soil
			Trichloroethene	1.40E+02	ug/kg	soil
			Tetrachloroethene	1.00E+02	ug/kg	soil
			4-Methyl-2-Pentanone	2.70E+03	ug/kg	soil
			Toluene	3.00E+02	ug/kg	soil
			Ethylbenzene	2.00E+01	ug/kg	soil
BH00071GA Duplicate BH00070GA	70495	7.35-8.0	Xylenes	9.00E+02	ug/kg	soil
			Methylene Chloride	4.70E+02	ug/kg	soil
			Acetone	1.70E+02	ug/kg	soil
			1,1-Dichloroethene	1.00E+02	ug/kg	soil
			1,1-Dichloroethane	2.50E+03	ug/kg	soil
			1,2-Dichloroethane	1.30E+03	ug/kg	soil
			1,1,1-Trichloroethane	1.26E+04	ug/kg	soil
			Trichloroethene	3.50E+03	ug/kg	soil
			Tetrachloroethene	3.80E+03	ug/kg	soil
			4-Methyl-2-Pentanone	8.00E+02	ug/kg	soil
			Toluene	5.50E+03	ug/kg	soil
			Ethylbenzene	3.80E+03	ug/kg	soil
BH00073GA	70495	8.4-8.7	Xylenes	5.60E+03	ug/kg	soil
			Methylene Chloride	8.30E+01	ug/kg	soil
			Acetone	2.70E+02	ug/kg	soil
			1,1-Dichloroethene	2.90E+01	ug/kg	soil
			1,1-Dichloroethane	6.80E+01	ug/kg	soil
			1,1,1-Trichloroethane	1.40E+02	ug/kg	soil
			Trichloroethene	1.20E+01	ug/kg	soil
			4-Methyl-2-Pentanone	2.30E+03	ug/kg	soil
			Toluene	4.20E+01	ug/kg	soil

Table 4.2.2
Volatile Organic Analysis-Contract Laboratory Program

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00054GA	70295	5.0-5.6	Acetone	4.20E+04 ug/kg		soil
			1,1-Dichloroethane	1.00E+03 ug/kg		soil
			1,1,1-Trichloroethane	2.30E+04 ug/kg		soil
			Trichloroethene	1.00E+03 ug/kg		soil
			Tetrachloroethene	1.00E+03 ug/kg		soil
			4-Methyl-2-Pentanone	3.00E+03 ug/kg		soil
			Toluene	1.30E+04 ug/kg		soil
			Ethylbenzene	5.00E+03 ug/kg		soil
			Xylenes	2.40E+04 ug/kg		soil
BH00060GA	70395	4.2-4.4	Methylene Chloride	1.08E+05 ug/kg		soil
			1,1,1-Trichloroethane	4.00E+03 ug/kg		soil
			Tetrachloroethene	3.50E+03 ug/kg		soil
			Toluene	7.70E+02 ug/kg		soil
			Xylenes	2.20E+03 ug/kg		soil
BH00062GA	70395	5.0-5.65	Methylene Chloride	1.08E+05 ug/kg		soil
			Tetrachloroethene	9.60E+02 ug/kg		soil
			Toluene	9.90E+02 ug/kg		soil
			Ethylbenzene	8.40E+02 ug/kg		soil
			Xylenes	6.60E+03 ug/kg		soil
BH00064GA	70395	7.0-7.4	Methylene Chloride	1.01E+05 ug/kg		soil
			1,1,1-Trichloroethane	5.00E+02 ug/kg		soil
			Tetrachloroethene	6.00E+02 ug/kg		soil
			Ethylbenzene	6.00E+02 ug/kg		soil
			Xylenes	1.40E+03 ug/kg		soil
BH00067GA	70495	4.0-4.35	1,1,1-Trichloroethane	7.00E+03 ug/kg		soil
			Tetrachloroethene	1.00E+04 ug/kg		soil
			Toluene	2.00E+03 ug/kg		soil
			Ethylbenzene	1.30E+03 ug/kg		soil
			Xylenes	9.60E+03 ug/kg		soil
BH00068GA	70495	5.5-5.9	1,1,1-Trichloroethane	1.50E+04 ug/kg		soil
			Trichloroethene	1.00E+03 ug/kg		soil
			Tetrachloroethene	1.90E+04 ug/kg		soil
			Toluene	4.30E+03 ug/kg		soil
			Ethylbenzene	4.30E+03 ug/kg		soil
			Xylenes	2.30E+04 ug/kg		soil
BH00074GA	70595	2.9-3.5	Acetone	2.85E+05 ug/kg		liquid

Table 4.2.2
Volatile Organic Analysis-Contract Laboratory Program

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00074GA	70595	2.9-3.5	1,1-Dichloroethene	2.65E+05 ug/kg		liquid
			1,1-Dichloroethane	2.02E+06 ug/kg		liquid
			1,1,1-Trichloroethane	1.40E+08 ug/kg		liquid
			Trichloroethene	2.40E+06 ug/kg		liquid
			Tetrachloroethene	1.30E+08 ug/kg		liquid
			4-Methyl-2-Pentanone	1.77E+07 ug/kg		liquid
			Toluene	6.00E+07 ug/kg		liquid
			Ethylbenzene	7.35E+06 ug/kg		liquid
			Xylenes	3.95E+07 ug/kg		liquid
BH00075GA	70595	3.5-3.6	1,1,1-Trichloroethane	9.15E+05 ug/kg		soil
			Tetrachloroethene	6.80E+06 ug/kg		soil
			Toluene	7.65E+05 ug/kg		soil
BH00076GA	70695	5.0-5.5	1,1,1-Trichloroethane	1.10E+07 ug/kg		soil
			Tetrachloroethene	2.50E+07 ug/kg		soil
			Toluene	3.50E+06 ug/kg		soil
			Xylenes	1.45E+06 ug/kg		soil
BH00077GA	70695	5.5-6.0	1,1,1-Trichloroethane	5.00E+06 ug/kg		soil
			Tetrachloroethene	1.45E+07 ug/kg		soil
			Toluene	2.00E+06 ug/kg		soil
			Xylenes	8.50E+05 ug/kg		soil
BH00078GA	70695	5.0-6.0	Methylene Chloride	2.89E+06 ug/kg		liquid
			1,1,1-Trichloroethane	1.30E+07 ug/kg		liquid
			Tetrachloroethene	2.70E+07 ug/kg		liquid
			Toluene	4.00E+06 ug/kg		liquid
			Ethylbenzene	3.75E+05 ug/kg		liquid
			Xylenes	2.10E+06 ug/kg		liquid
BH00079GA	70795	5.5-6.0	Methylene Chloride	7.20E+04 ug/kg		soil
			Acetone	2.20E+04 ug/kg		soil
			1,1-Dichloroethane	4.30E+03 ug/kg		soil
			1,1,1-Trichloroethane	2.60E+05 ug/kg		soil
			Trichloroethene	4.20E+04 ug/kg		soil
			Tetrachloroethene	1.99E+05 ug/kg		soil
			Toluene	8.00E+04 ug/kg		soil
			Ethylbenzene	1.40E+04 ug/kg		soil
			Xylenes	8.30E+04 ug/kg		soil

Table 4.2.2
Volatile Organic Analysis-Contract Laboratory Program

Sample #	Location Code	Depth	Analyte	Result	Unit Measure	Sample Matrix
BH00080GA	70895	7.55-7.9	Methylene Chloride	4.10E+04 ug/kg		soil
			Tetrachloroethene	3.00E+02 ug/kg		soil
			Toluene	4.00E+02 ug/kg		soil
BH00081GA	70995	7.1-7.75	1,1,1-Trichloroethane	9.50E+04 ug/kg		soil
			Tetrachloroethene	6.90E+05 ug/kg		soil
			Toluene	8.60E+04 ug/kg		soil
			Ethylbenzene	9.00E+03 ug/kg		soil
			Xylenes	1.00E+05 ug/kg		soil
BH00082GA Duplicate of BH00081GA	70995	6.5-7.1	Methylene Chloride	2.60E+04 ug/kg		soil
			Trichloroethene	4.00E+03 ug/kg		soil
			Tetrachloroethene	3.00E+03 ug/kg		soil
			Toluene	4.00E+03 ug/kg		soil
BH00083GA	71095	7.3-7.6	Methylene Chloride	2.80E+03 ug/kg		soil
			Toluene	3.00E+02 ug/kg		soil
BH00084GA	71195	7.1-7.75	Tetrachloroethene	6.00E+02 ug/kg		soil
BH00085GA	71295	6.0-6.5	Methylene Chloride	3.00E+02 ug/kg		soil
			Benzene	3.00E+02 ug/kg		soil
			Tetrachloroethene	4.00E+02 ug/kg		soil
BH00087GA	71395	7.2-7.7	Tetrachloroethene	6.00E+02 ug/kg		soil

Table 4.3.1
Field Observations-Soil Gas Survey
Photoionization Detector Results

Sample Location	Depth (Feet)	Observed Reading (PID max in PPM)	Comments
SG000195	3	19	1000 cc
SG000195	6	59	250 cc
SG000295	3	34	1000cc
SG000295	6	No recovery	collected water
SG000395	3	295	1000cc
SG000395	3	-	SG000002GA
SG000495	3	30.2	300 cc
SG000495	3	79.3	approx 500 cc
SG000495	3	-	SG000001GA
SG000495	6	39	200cc
SG000995	3	4.4	small volume
SG000995	3	4.2	approx. 300 cc
SG000995	6	30.2	small volume
SG001095	3	No recovery	soil too tight
SG001095	4	0	small volume
SG001095	6	30	small volume
SG001095	9	No recovery	No recovery
SG001195	3	9	1000L
SG001295	3	0	1000L

Table 4.3.2
Soil Gas Survey Analytical Results

Sample Number	SG00001GA	SG00002GA
Analyte		
trans-dichloroethane	13 U	58 J
1,1-dichloroethane	309 U	309 U
cis-dichloroethene	13 U	96 J
benzene	16 U	16
chloroform	51 J	37 J
1,1,1-trichloroethane	349 J	294 J
trichloroethene	22 J	559 J
4-Methyl-2-Pentanone	122 U	4157 J
ethylbenzene	12 U	623 J
m,p-xylene	12 U	1569 J
o-xylene	12 U	415 J
1,1,2-trichloroethane	9 U	9 U
1,1,2,2-tetrachloroethene	219 J	19 J
Dilution Factor	10	10

*Values are rounded and presented in mg/kg (ppm)

U-Indicates the compound was analyzed for but not detected (The value reported is the sample quantitation limit)

J-Indicates the value reported is an estimated value outside the component calibration range.

Analytes analyzed for but not detected under all three analyses have been dropped from this table

Results originally presented in mg/m³. The following conversion factor was used:

$$\text{ppm} = [(\text{mg/m}^3) * 24.5] / \text{Molecular Weight of Compound}$$

Appendix A

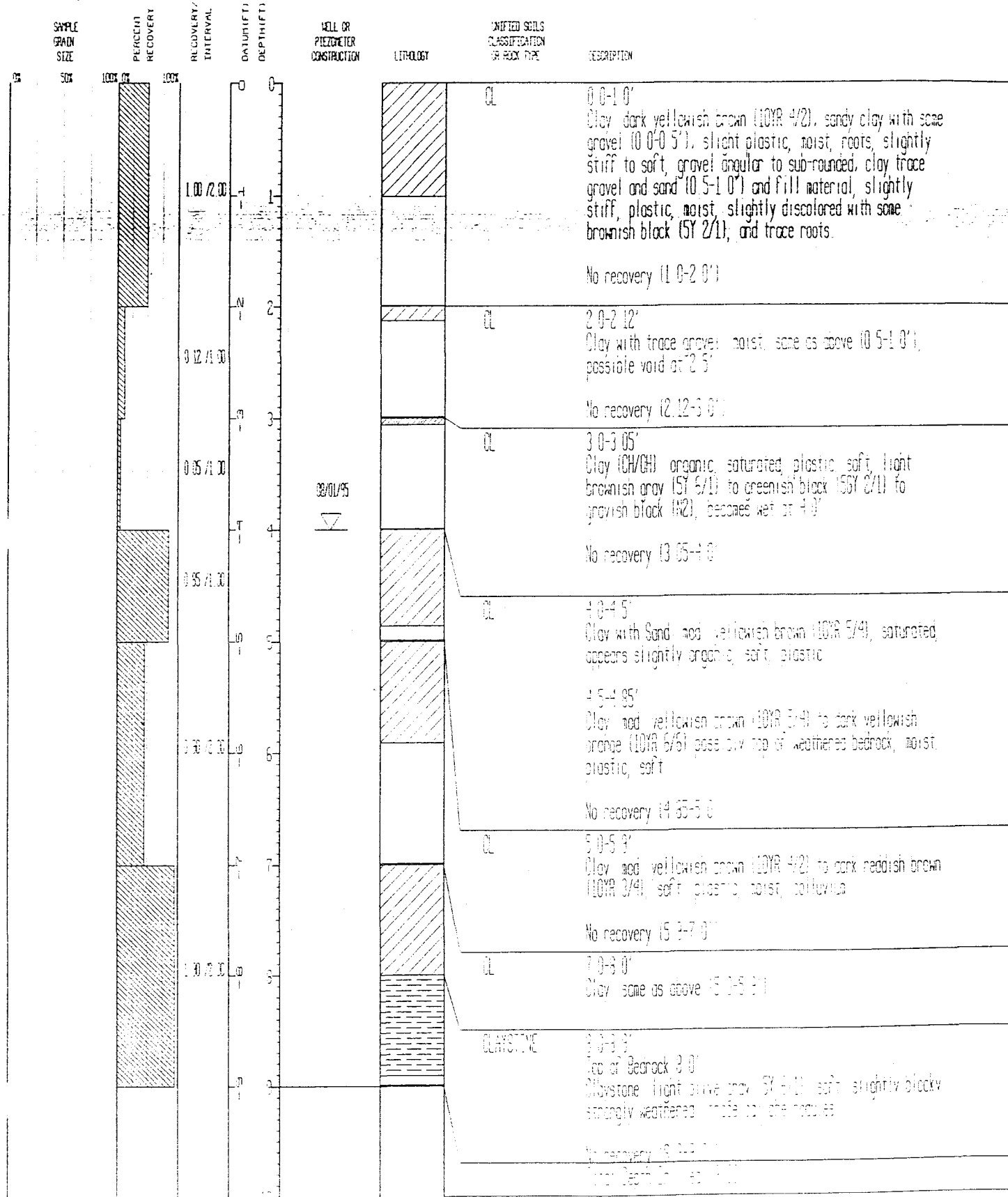
Well-Site Field Logs

GRADUAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE	TOTAL DEPTH (FT) 9.00	GROUND ELEVATION (FT) 9.00	PROJECT NUMBER	SURVEY/RT	LOG OF BORING NUMBER
NORTH 0	AREA TRENCH T-2, G02	CASING DIAMETER (IN)	GEOLOGIST	BRYAN WARDER	70195
EAST 0	LOCATOR NUMBER X1	BORERHOLE DIAMETER (IN)	DATE DRILLED	03/01/95	
REMARKS					

9000516A



GRADATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 10.00

AREA TRENCH 1-2, C02

LOCATOR NUMBER 41

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (IN)

BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER

C02-BT/RI

GEOLOGIST

BRYAN HARDER

DATE DRILLED

08/01/95

LOG OF BORINGS NUMBER

70295

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

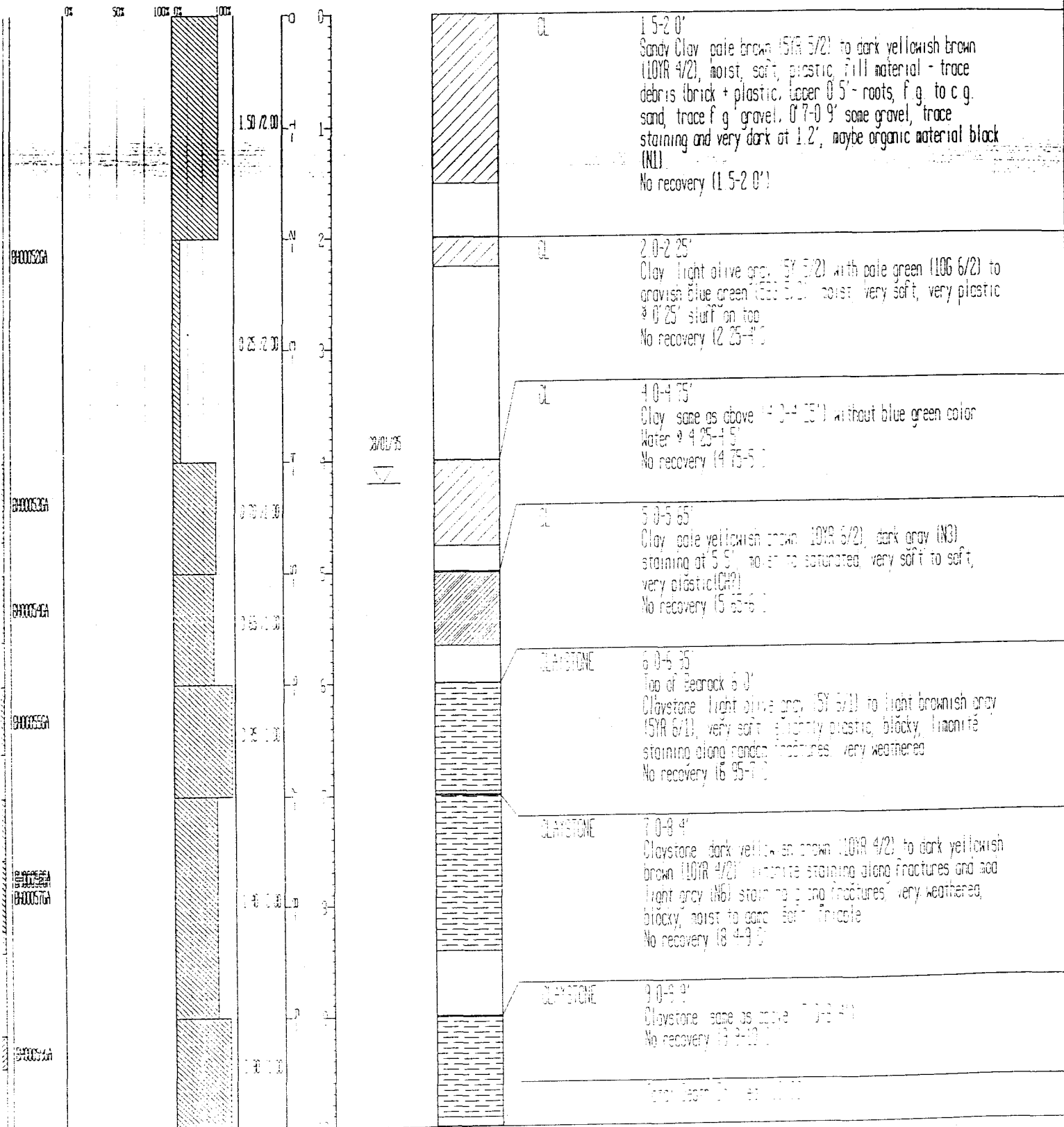
DATE (YR) DEPTH (FT)

WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION



GRADUATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 10.00

AREA TRENCH T-2, 002

LOCATOR NUMBER 71

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (IN)

BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER

702-55741

GEOLOGIST

BRYAN WISDER

DATE DRILLED

12/02/95

LOG OF BORDING NUMBER

70395

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

DATE (FT) DEPTH (FT)

WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNITED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION

900050A

900050A

900050A

900050A

900050A

900050A

900050A

0 0-0.15'
Organic/roots, grass

CL

0 15-0.8'
Clay to Gravelly Clay with trace of Sand; dark yellowish brown (10YR 4/2) to pale olive (10YR 6/2), moist to damp, roots
0 35-0.8' f-c gravel (latzite) sub-angular to angular, f g to c g sand, sub-angular to sub-rounded, slight plastic, stiff

No recovery (0.8-2.0') and (2.0-3.0')

CL

3 0-3.55'
Clay with trace Sand; grayish brown (5YR 3/2) to dusky brown (5YR 2/2), soft, moist, plastic, f g to c g sand, some organics or slough on upper 3.15' tip has black (N1) clay, 0.05' very organic

No recovery (3.55-4.0')

CL

4 0-4.3'
Clay; grayish brown (5YR 3.2) to pale green (10G 6/2), odor, wet plastic, soft

4 3-4.7'
Polyacrylic plastic (P) very hard, becomes saturated at 4.3'

No recovery (4.7-5.0')

CLAYSTONE

5 0-5.7'
Top of Bedrock 5.0'
Claystone light olive gray (5Y 5/2), soft, plastic, damp, trace gray staining along fractures, very weathered

No recovery (5.7-6.0')

CLAYSTONE

6 0-10.0'
Claystone same as above (5.3-5.7') with iron oxide staining and trace of gray staining along fractures, very weathered, becomes harder at 8.0', abundant discoloration, 9.1-9.5' vertical fracture with gray discoloration, wet along fractures, blocky

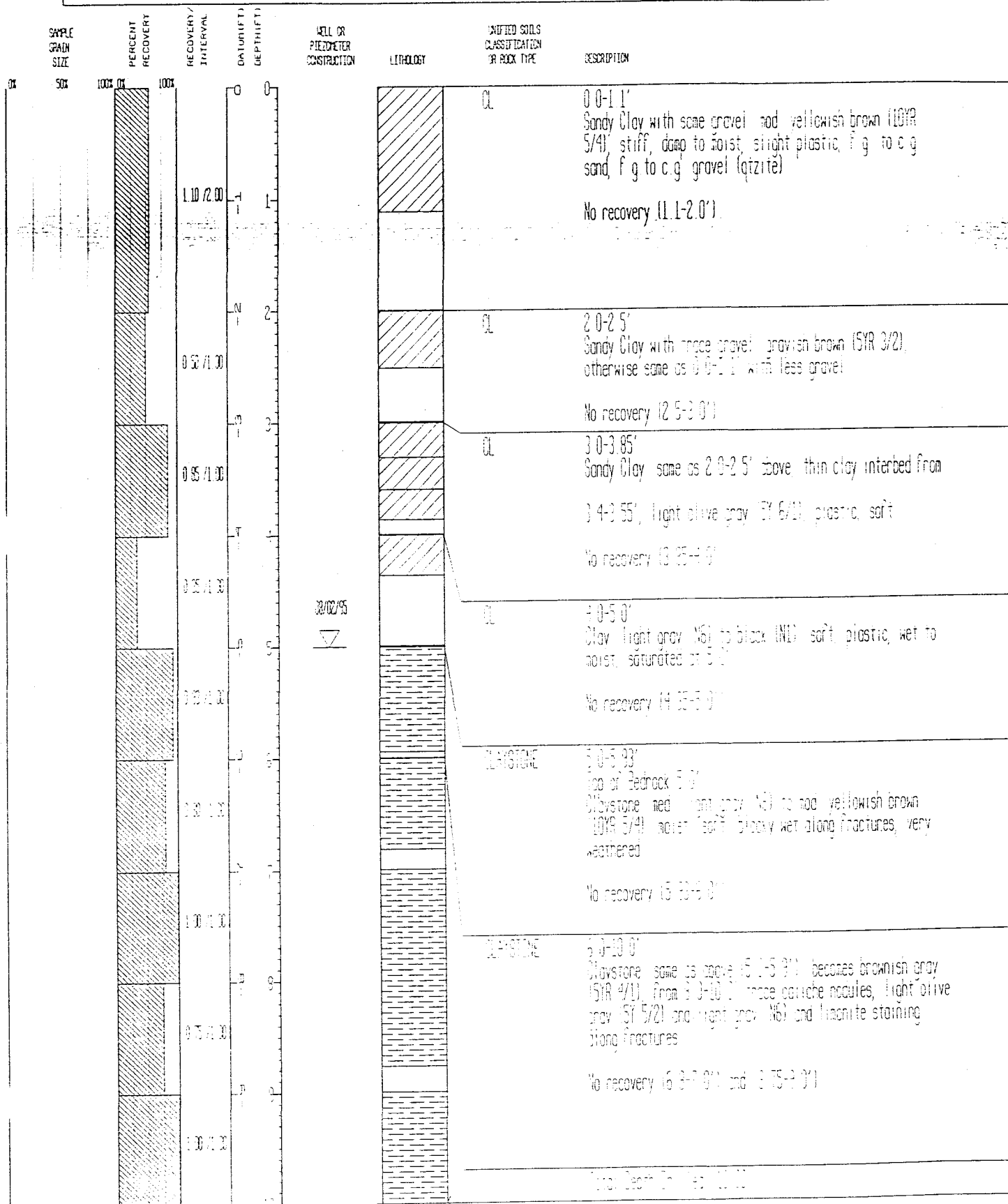
No recovery (6.3-7.0'), (7.4-8.0') and (8.9-10.0')

Total Depth Drilled 10.00

STATE PLANE COORDINATE	TOTAL DEPTH (FT) 10.00	GROUND ELEVATION (FT) 0.00	PROJECT NUMBER	LOG OF BORING NUMBER
NORTH 0	AREA 002	CASING DIAMETER (IN)	GEOLOGIST	
EAST 0	LOCATOR NUMBER X1	BOREHOLE DIAMETER (IN) 1.00	DATE DRILLED	
REMARKS				

70495

SAMPLE NUMBER



VERTICAL SAMPLE DEPTH
GRAVITATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 4.50

AREA TRENCH, 012

LOCATOR NUMBER X1

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (IN)

BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER

002-312/21

GEOLOGIST

RYAN HARDER

DATE DRILLED

03/07/25

LOG OF BORING NUMBER

70595

SAMPLE GRAIN SIZE

PERCENT RECOVERY

IN COVER / INTERVAL

UNSATURATED DEPTH (FT)

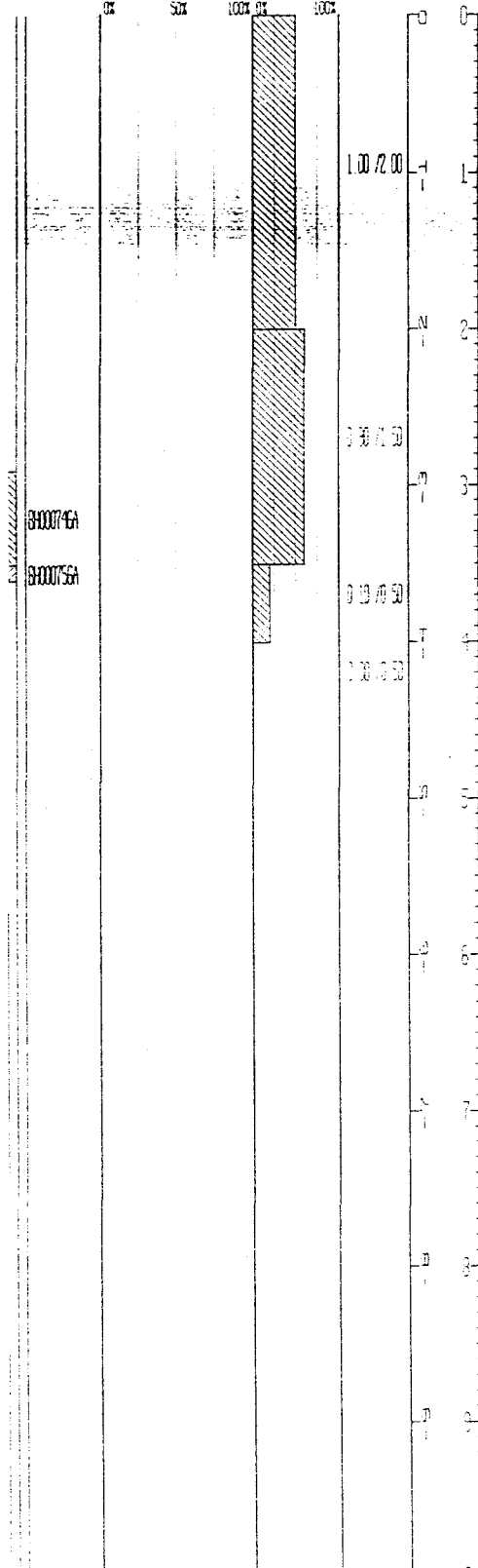
WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNITED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION

000076A
000076B



03/07/25
▽

CL	0 0-0.8'	Gravelly Clay with Sand dark yellowish brown (10YR 4/2), dry to damp, f g to c g gravel, sub-angular to sub-rounded, slight non plastic, stiff
	0.8-1.0'	Clay with light olive gray (5Y 5/2) to dusky yellow (5Y 6/4), damp to moist, soft, plastic
	No recovery (1.0-2.0')	
NO RECOVERY	No recovery (2.0-3.5')	
	Void from 2.9-3.5'	
CL	3.5-3.6'	Clay soft
	No recovery (3.6-4.0')	
NO RECOVERY	4.0-4.5'	No recovery
Total Depth Drilled = 4.50		

GRADUAL SAMPLE DEPTH

SAMPLE NUMB

STATE PLANE COORDINATE	TOTAL DEPTH (FT) 7.00	GROUND ELEVATION (FT) 0.00	PROJECT NUMBER	012-451/RI	LOG OF BORING NUMBER
NORTH 0	AREA TRENCH T-2, 012	CASING DIAMETER (IN)	GEOLOGIST	BRAN HANCOCK	70695
EAST 0	LOCATOR NUMBER X1	BOREHOLE DIAMETER (IN) 1.00	DATE DRILLED	03/03/95	
REMARKS					

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

DATUM (FT)

WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

DRIFTED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION

0%

50%

100%

100%

0.20 / 2.00

0.00 / 2.00

0.00 / 1.00

1.00 / 2.00

03/03/95

▽

CL

0.0-0.2'
Gravelly Clay with Sand dark yellowish brown (10YR 4/2), dry to damp, f.g. to c.g. gravel, sub-angular to sub-rounded, slight non-plastic, stiff

No recovery (0.2-2.0')

NO RECOVERY

2.0-4.0'
No recovery Hard at 3.0'

Void from 3.0-4.0'
Water/Liquid at 3.0'

NO RECOVERY

4.0-5.0'
No recovery

CL

5.0-5.5'
Sandy Clay dark yellowish brown (10YR 4/2), soft, plastic, saturated

CLAYSTONE

5.5-7.0'
Top of Bedrock 5.5'
Claystone light olive gray (15Y 5/2) to mod yellowish brown (10YR 4/2), wet soft

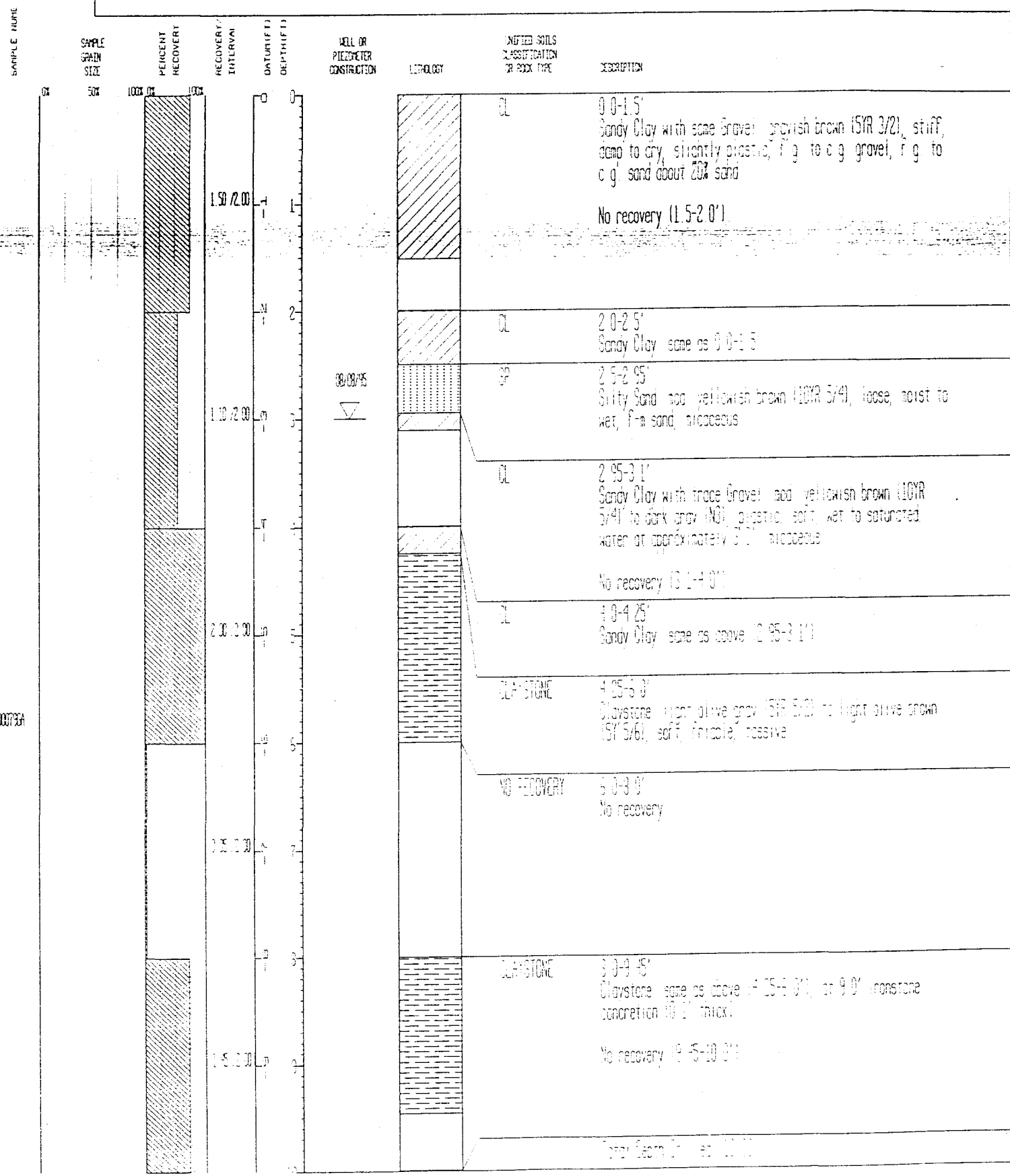
No recovery (6.0-7.0')

Total Depth Drilled 7.00

0400765A
0400765A
0400765A

STATE PLANE COORDINATE	TOTAL DEPTH (FT) 10.00	GROUND ELEVATION (FT) 0.00	PROJECT NUMBER 002-RT/RT	LOG OF BORING NUMBER
NORTH 0	AREA TRENCH T-2, 002	CASING DIAMETER (IN) 1.00	GEOLOGIST BRYAN HARBER	70795
EAST 0	LOCATOR NUMBER X1	BORER DIAMETER (IN) 1.00	DATE DRILLED 03/03/95	
REMARKS				

CLIENT, SAMPLE, DEPTH, QUANTITIES, SAMPLE DEPTH



GRADATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE
NORTH 0
EAST 0
REMARKS

TOTAL DEPTH (FT) 10.00
AREA TRENCH F-2, Q12
LOCATION NUMBER X1

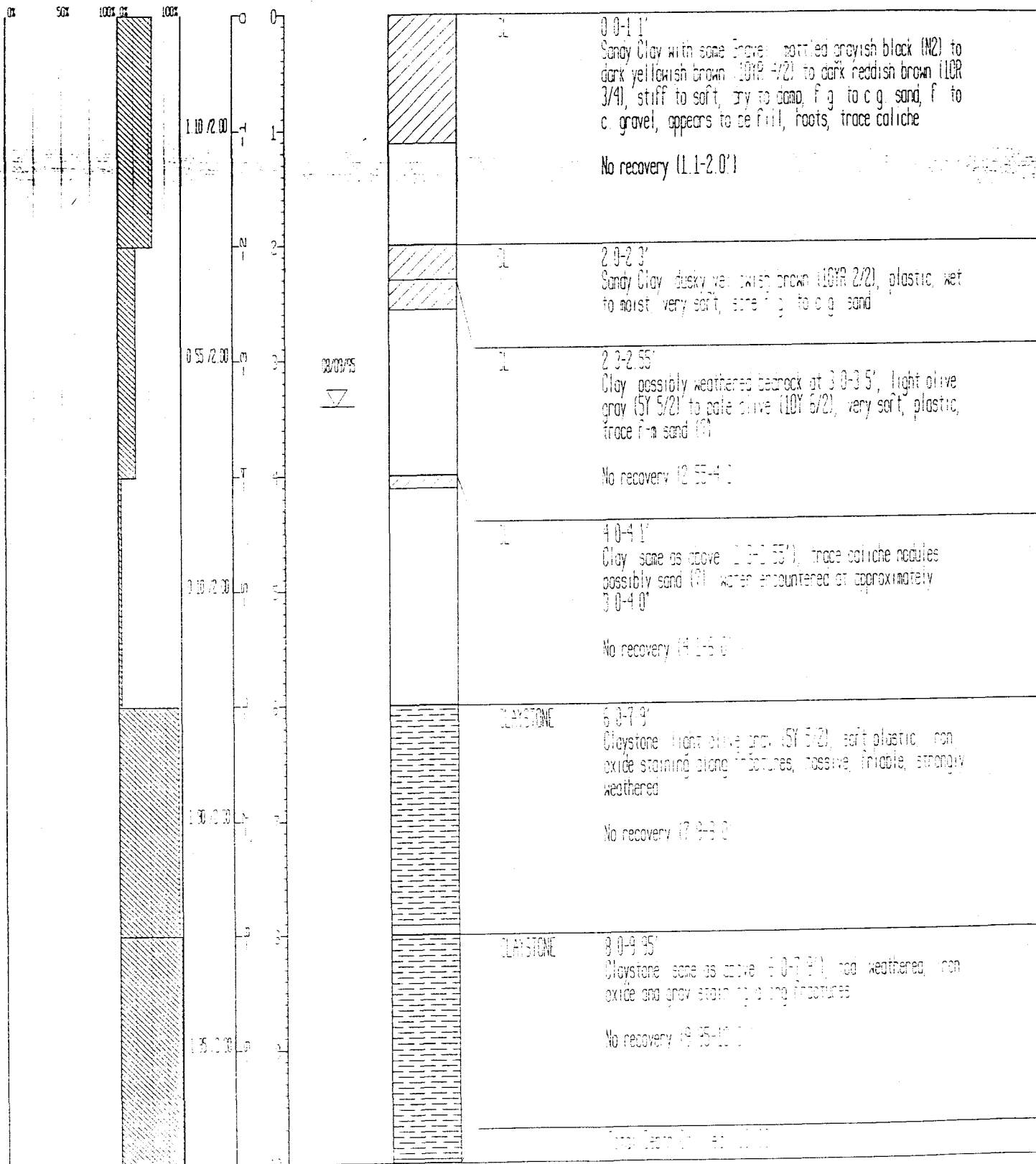
GROUND ELEVATION (FT) 0.00
CASING DIAMETER (IN)
BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER Q12-PT/RI
GEOLOGIST BRYAN WARDER
DATE DRILLED 08/03/95

LOG OF BORING NUMBER

70895

SAMPLE GRAIN SIZE PERCENT RECOVERY RECOVERY INTERVAL DATUM (FT) DEPTH (FT) WELL OR PIEZOMETER CONSTRUCTION LITHOLOGY UNIFIED SOILS CLASSIFICATION R-BOX TYPE DESCRIPTION



000000

GRADATIONAL SAMPLE DEPTH

SAMPLE NAME

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 10.00

AREA TRENCH T-2, QU2

LOCATOR NUMBER X1

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (IN)

BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER

GEOLOGIST

DATE DRILLED

QU2-RFL/R1

BRYAN HARPER

08/09/95

LOG OF BORING NUMBER

70995

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

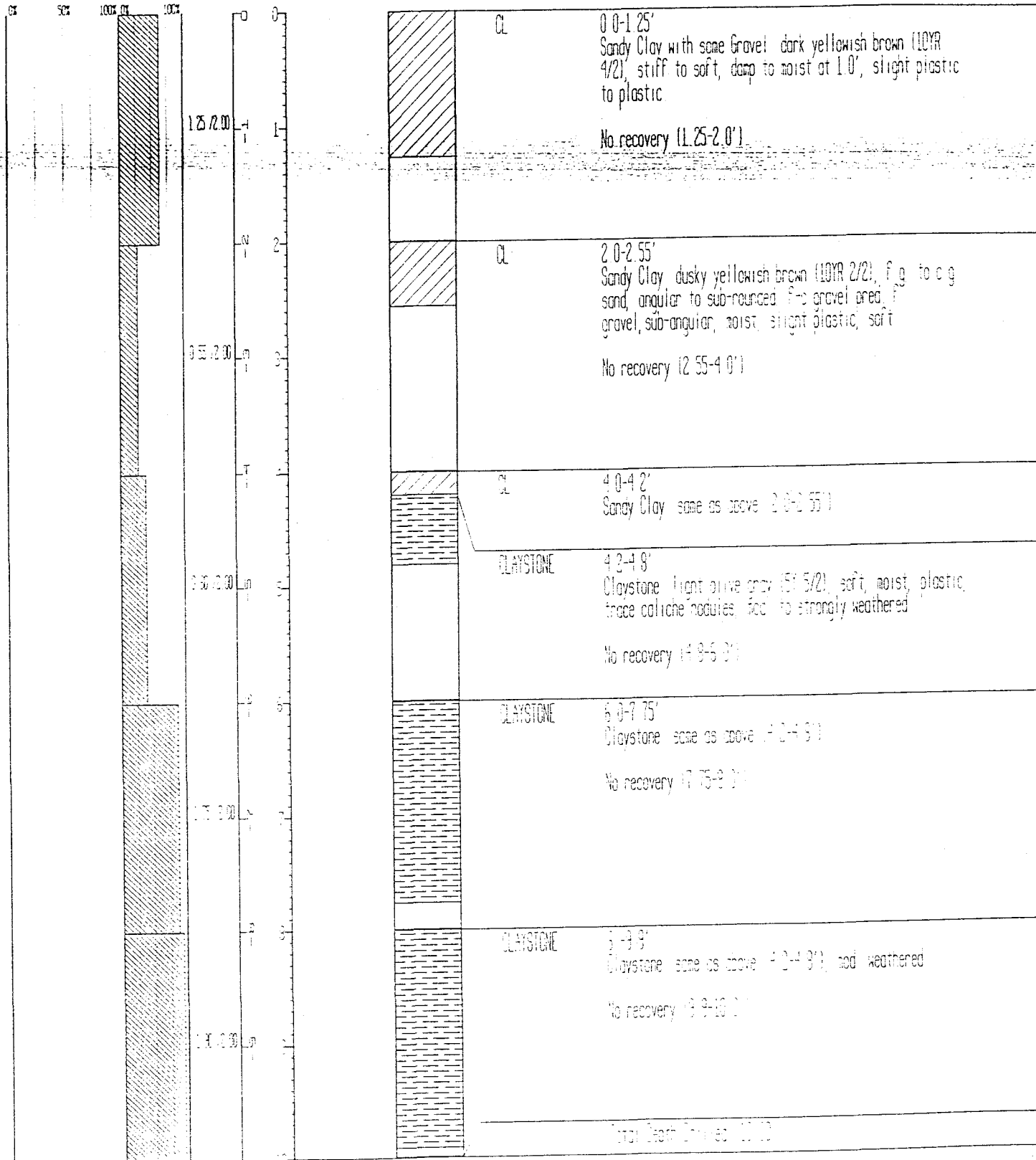
DATE/DEPTH

WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNITED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION



3400322GA

340031GA

GRADATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 10.00

AREA TRENCH T-2, 002

LOCATOR NUMBER 41

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (IN)

BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER

002-251/RI

GEOLOGIST

BRYAN HARDER

DATE DRILLED

08/09/95

LOG OF BORING NUMBER

71095

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

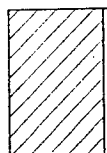
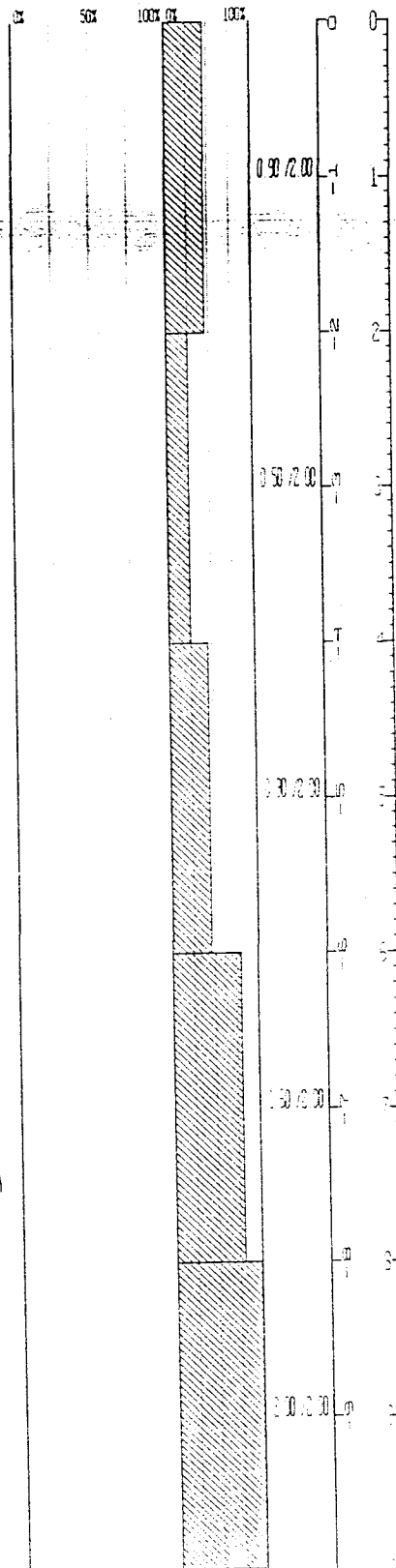
DATUM (FT)

WELL OR PNEUMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE

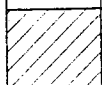
DESCRIPTION



CL

0.0-0.9'
Sandy Clay with some Silt - dark yellowish brown (10YR 4/2) to mod. yellowish brown (10YR 5/4), dry to damp, soft, trace f-c gravel, f. to c. sand, roots.

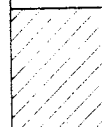
No recovery (0.9-2.0')



CL

2.0-2.5'
Sandy Clay with some Silt - dusky yellowish brown (10YR 2/2), moist, soft, f g to c g sand, slightly plastic

No recovery (2.5-4.0')



CL

4.0-4.8'
Gravelly Clay with some Silt and Sand - mod. yellowish brown (10YR 5/4), dense to very stiff, moist, non to slightly plastic

CLAYSTONE

4.8-4.9'
Top of Bedrock 4.8'
Claystone - light olive gray (5Y 5/2), soft, moist, plastic

No recovery (4.9-6.0')



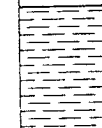
CLAYSTONE

6.0-6.1'
Claystone

CLAYSTONE

6.1-7.6'
Claystone - light olive gray (5Y 5/2), soft, moist, plastic, weathered, slightly blocky, friable, trace calcareous nodules

No recovery (7.6-8.0')



CLAYSTONE

8.0-10.0'
Claystone - same as above (6.0-7.6')

Total Depth Drilled 10.00

GRADATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 10.00

AREA TRENCH 002

LOCATOR NUMBER X1

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (CM)

BORCHOLE DIAMETER (CM) 1.00

PROJECT NUMBER

002-001/01

GEOLOGIST

BRYAN HARBER

DATE DRILLED

03/09/95

LOG OF BORING NUMBER

71195

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

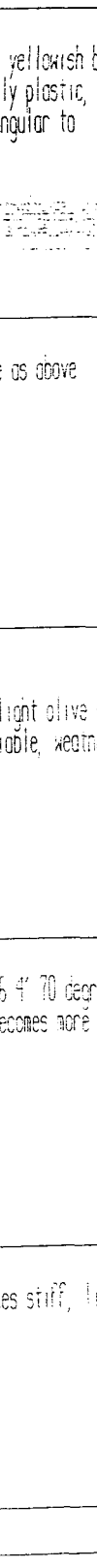
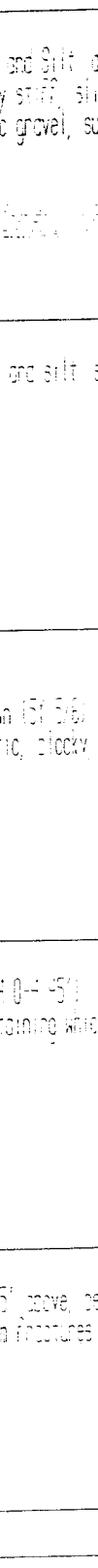
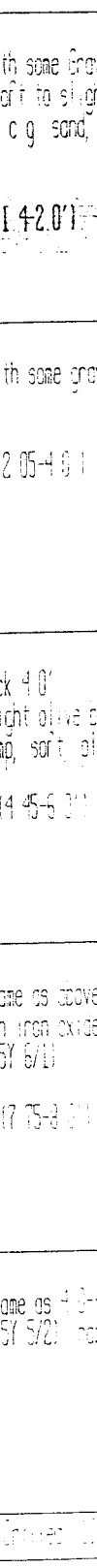
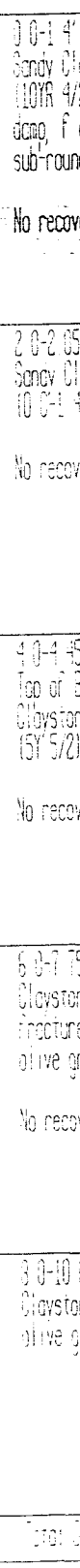
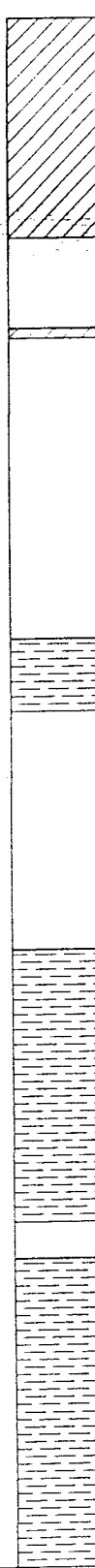
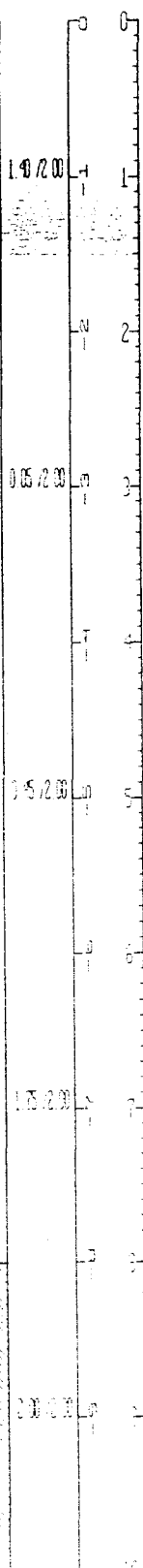
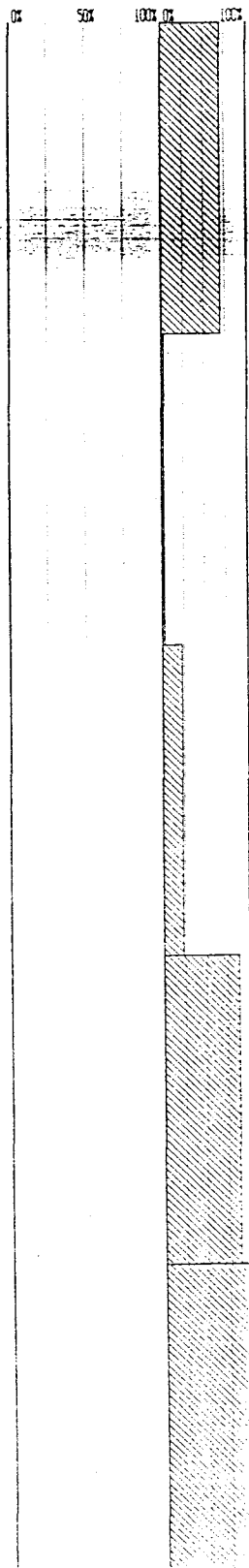
DATE/TIME

WELL OR PNEUMATIC CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION



0 0-1.4'
Sandy Clay with some Gravel and Silt, dark yellowish brown (10YR 4/2), soft to slightly stiff, slightly plastic, dry to damp, f g to c g sand, f-c gravel, sub-angular to sub-rounded.

No recovery (1.4-2.0')

CL

2 0-2.05'
Sandy Clay with some gravel and silt, same as above (10YR 4/2)

No recovery (2.05-4.0')

CLAYSTONE

4 0-4.45'
Top of bedrock 4.0'
Claystone, light olive brown (5Y 5/6) to light olive gray (5Y 5/2), damp, soft, plastic, blocky, friable, weathered.

No recovery (4.45-6.0')

CLAYSTONE

6 0-7.75'
Claystone, same as above (4.0-4.45') at 6.4' 70 degree fracture with iron oxide staining which becomes more light olive gray (5Y 6/1)

No recovery (7.75-8.0')

CLAYSTONE

8 0-10.0'
Claystone, same as 4.0-4.45' above, becomes stiff, light olive gray (5Y 5/2), random fractures

Total Depth Drilled: 10.00'

00000-01

VERTICAL SCALE
GRADATIONAL SAMPLE DEPTH

SAMPLE NUMB

STATE PLANE COORDINATE
NORTH 0
EAST 0
REMARKS

TOTAL DEPTH (FT) 10.00
AREA QUG
LOCATOR NUMBER X1

GROUND ELEVATION (FT) 0.00
CASING DIAMETER (IN)
BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER
GEOLOGIST
DATE CRILLED

LOG OF BORING NUMBER
71295

DEPTH (FT)	RECOVERY (%)	RECOVERY INTERVAL	DATE (YR)	WELL OR PIEZOMETER CONSTRUCTION	LITHOLOGY	UNIFIED SOILS CLASSIFICATION OR ROCK TYPE	DESCRIPTION
0.00	100	0.00-1.45			CL	CL	0.0-1.45' Sandy Clay with some Gravel and Silt, dark yellowish orange (10YR 6/0) to dark yellowish brown (10YR 4/2), dry to damp, stiff, f-c gravel, f to c sand. No recovery (1.45-2.0')
1.45	100	1.45-2.5			CL	CL	2.0-2.5' Clay, light olive gray (5Y 5/2) to dark yellowish orange (10YR 6/6), moist, soft, plastic, trace caliche nodules and possible organics (natural), possibly weathered bedrock. No recovery (2.5-4.0')
2.5	100	2.5-4.0			CL	CL	4.0-4.5' Sandy Clay with fine gravel, dark yellowish brown, moist, soft, f-g to c-g sand, gravel, trace organic and peat.
4.0	100	4.0-4.8			CL	CL	4.5-4.8' Clay, light gray (N7), soft, plastic, moist, possibly weathered bedrock, becomes wet at 5.0'. No recovery (4.8-6.0')
4.8	100	4.8-6.0			CLAYSTONE	CLAYSTONE	6.0-7.5' Top of Bedrock 6.0' Claystone, light olive gray (5Y 5/2), slightly plastic, moist, blocky, friable, weathered. No recovery (7.5-8.0')
6.0	100	6.0-9.5			CLAYSTONE	CLAYSTONE	8.0-9.5' Claystone, same as above 6.0-7.5'. No recovery (9.5-10.0')

30/09/95

▽

900856
900856

Total Depth 10.00

GRADATIONAL SAMPLE DEPTH

SAMPLE NUMBER

STATE PLANE COORDINATE

NORTH 0

EAST 0

REMARKS

TOTAL DEPTH (FT) 10.00

AREA TRENCH T-2, Q02

LOCATOR NUMBER X1

GROUND ELEVATION (FT) 0.00

CASING DIAMETER (IN)

BOREHOLE DIAMETER (IN) 1.00

PROJECT NUMBER

Q02-PFI/RI

GEOLOGIST

BRYAN WAGER

DATE DRILLED

09/09/95

LOG OF BORING NUMBER

71395

SAMPLE GRAIN SIZE

PERCENT RECOVERY

RECOVERY INTERVAL

DATE/TIME DEPTH (FT)

WELL OR PIEZOMETER CONSTRUCTION

LITHOLOGY

UNIFIED SOILS CLASSIFICATION OR ROCK TYPE

DESCRIPTION

CL

0 0-1.7'

Sandy Clay with trace Gravel, mod yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/2), slightly stiff to soft, plastic, dry to damp, f g to c g sand, f-c gravel

No recovery (1.7-2.0')

CL

2 0-2.2'

Clay mottled, light olive gray (5Y 5/2) to mod brown (5YR 4/4), moist, soft, plastic

SC

2 2-2.5'

Clayey Sand with gravel, dusky yellowish brown (10YR 4/2), moist, slightly plastic, dense, f g to c g sand, f-c gravel

CL

2 5-2.6'

Clay mottled, dark yellowish brown (10YR 4/2), moist, soft, plastic

No recovery (2.6-4.0')

CL

4 0-4.7'

Sandy Clay with trace gravel, dusky yellowish brown (10YR 2/2), moist, soft, slightly plastic, f g to c g sand, f-c gravel

CL

4 7-4.9'

Clay, light olive gray (5Y 5/2), soft, moist, plastic, possibly weathered bedrock

No recovery (4.9-6.0')

CLAYSTONE

6 0-7.7'

Top of Bedrock 6.0'
Claystone, light olive gray (5Y 5/2), non oxide staining along fractures, soft, plastic, blocky, friable, weathered

No recovery (7.7-8.0')

CLAYSTONE

8 0-10.0'

Claystone, same as above 6.0-7.7'

Total Borehole Depth 10.00'

B000370

LAB/LOCATION

Form: EGGK-P-121593-GWCOGC-V1.2

Deliver BLUE copy to RFEDS with Datacap Transmittal

Fax Results to Robin Volk @ 8663

SAMPLERS

SITE CONTACT/PHONE

Ray Michael (2013) 966-4930

FAX Ext

6061751

LAB/LOCATION

ANALYTICAL CHARGE #

188

15000000

RFP 005930

EG&G ROCKY FLATS, CHAIN OF CUSTODY

General Chemistry

DATE	TIME	SAMPLE NUMBER	LOCATION CODE	CONTAINER TYPE, SIZE, UNITS
8-2-95	0824	BH0000595A	70395	Sleeve
	0949	BH0000605A	70395	Sleeve
	1010	BH0000615A	70395	40ml AB
	1025	BH0000625A	70395	40Z-B
	1041	BH0000635A	70395	Sleeve
	1057	BH0000645A	70395	Sleeve

	NUMBER OF CONTAINERS	S	S	M	S	S	S		
	MEDIA: S=SOIL, W=WATER	S	S	M	S	S	S		
	F=FILTERED, U=UNFILTERED								
	R=TURN AROUND RUSH								
	OUT OF SPEC REPORTS								

[illegible]

RELINQUISHED BY		DATE/TIME		RECEIVED BY	DATE/TIME		LABORATORY USE ONLY		Y	N
Mentel Wood		8/2/95	1130	Royal Nuclear	8-2-95	1130	PKG REC'D/CUSTODY SEALS INTACT			
Royal Nuclear		8-3-95	1010	Royal Nuclear	8/3/95	0910	SAMPLE LABELS/COCs AGREE			
							TEMPERATURE WITHIN SPECIFICATION			100°C
							CORRECTED COPY ATTACHED			
REMARKS		(1) INCLUDES Cs, Li, Sr, Mo, Si, Sn (2) TSS, TDS, Cl, F, SO4, CO3, HCO3				SHIPMENT METHOD <i>Hand Delivered</i>				
AIR BILL NO.:										

150880

881/b

General Chemistry

Form: EGGRFP-121593-GWCOCGC-v1.2

Mark Ward

Ray Michael (303) 966-4030

FAX Ext 613 783

LAB/LOCATION

ANALYTICAL CHARGE #

~~00150886~~
98805100


C-O-C NUMBER RFP 905921

EG&G ROCKY FLATS, CHAIN OF CUSTODY

General Chemistry

[illegible]

NUMBER OF CONTAINERS
MEDIA: S=SOIL, W=WATER
F=FILTERED, U=UNFILTERED
R=TURN AROUND RUSH
OUT OF SPEC REPORTS

 BOTTLE CODES PRESERVATIVE	COOLED TO 4°C
	NaOH
	HNO ₃
	H ₂ SO ₄
	HCl

[illegible]

RELINQUISHED BY	DATE/TIME		RECEIVED BY	DATE/TIME		LABORATORY USE ONLY	
						Y	N
Mark Wind	8/8/95	1030	Ray W. Michael	8-8-95	1030		
Ray W. Michael	8-9-95	0741	Ray W. Michael	8-9-95	0741		
REMARKS	(1) INCLUDES Cs, Li, Sr, Mo, Si, Sn (2) TSS, TDS, Cl, F, SO ₄ , CO ₃ , HCO ₃			SHIPMENT METHOD: hand deliver			
				AIR BILL NO.:			

CONTRACT **GOLDER** ANALYTICAL CHARGE # **98005100**
 SITE CONTACT/PHONE **Ray Michael (303) 966 4920** FAX EXT **6079** LAB/LOCATION **881**

C-O-C NUMBER **RFP 905977**

EG&G ROCKY FLATS, CHAIN OF CUSTODY

General Chemistry

DATE	TIME	SAMPLE NUMBER	LOCATION CODE	CONTAINER TYPE, SIZE, UNITS	NUMBER OF CONTAINERS	MEDIA: S=SOIL, W=WATER	F=FILTERED, U=UNFILTERED	R=TURN AROUND RUSH	OUT OF SPEC REPORTS	COOLED TO 4°C	NAOH	HN03	H2SO4	HCl
8/9/95	1420	BH000346A	71195	4025	15					X				
8/9/95	1520	BH000856A	71295	4025	15					X				
8/9/95	1528	BH000866A	71295	4025	24					X				
8/9/95	1634	BH000876A	71395	4025	15					X				

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	DATE/TIME	LABORATORY USE ONLY	Y	N
Mark White	9/9/95 1722	Ray Michael	8/9/95 1722		PKG REC'D/CUSTODY SEALS INTACT		
Ray Michael	8-10-95 1830	Ray Michael	8/10/95 1830		SAMPLE LABELS/COCs AGREE		
					TEMPERATURE WITHIN SPECIFICATION		C
					CORRECTED COPY ATTACHED		
					PROBLEMS OR DISCREPANCIES		

REMARKS (1) INCLUDES Cs, Li, Sr, Mo, Si, Sn
 (2) TSS, TDS, Cl, F, SO4, CO3, HCO3

SHIPMENT METHOD: *hand deliver*
 AIR BILL NO.:

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1732

DATE: 8/3/95

File

APPROVED: _____

N. C. Stoner
N. C. Stoner

SAMPLE DESCRIPTION 8 samples for volatile organic screening.

Date Sampled: 8/1/95

ANALYSIS RESULTS

The following sample was screened for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. Approximately 1 g of sample was purged and analyzed. A list of analytes screened is attached. Since the samples were screened only, there are estimated quantitations (PPB) noted. It can be assumed that detection limits are in the low (5-15) part per billion (PPB) range.

SAMPLE IDANALYTES IDENTIFIED

BH00051GA 70195 Soil

Methylene Chloride (50)
Acetone (400)
1,1-Dichloroethane (240)
1,1,1-Trichloroethane (1050)
Trichloroethene (670)
Tetrachloroethene (460)
Xylenes (85)

BH00052GA 70295 Soil

Acetone (16,000)
1,1-Dichloroethane (700)
1,1,1-Trichloroethane (1300)
Trichloroethene (200)
4-Methyl-2-Pentanone (3000)
Tetrachloroethene (315)
Toluene (1600)
Ethylbenzene (240)
Xylenes (1300)

BH00053GA 70295 Soil

Acetone (15,000)
1,1-Dichloroethane (400)
1,1,1-Trichloroethane (1800)
Trichloroethene (900)
4-Methyl-2-Pentanone (1700)
Toluene (900)
Ethylbenzene (220)
Xylenes (900)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

BH00054GA 70295 Soil

Methylene Chloride (740) ⁸⁶⁴4.74
Acetone (27,000) 27
1,1-Dichloroethane (2100) 2.1
1,1-Dichloroethene (500) .5
1,1,1-Trichloroethane (6000) 6
1,2-Dichloropropane (300) .3
Trichloroethene (3000) 3
4-Methyl-2-Pentanone (4000) 4
Tetrachloroethene (900) .9
Toluene (5000) 5
Ethylbenzene (2300) 2.3
Xylenes (8000) 8

BH00055GA 70295 Soil

Methylene Chloride (430)
Acetone (3900)
1,1-Dichloroethane (140)
1,1,1-Trichloroethane (320)
Trichloroethene (140)
4-Methyl-2-Pentanone (2700)
Toluene (190)
Xylenes (140)

BH00056GA 70295 Soil

Methylene Chloride (1200)
Acetone (14,000)
1,1-Dichloroethene (240)
1,1-Dichloroethane (380)
1,1,1-Trichloroethane (2300)
Trichloroethene (1500)
4-Methyl-2-Pentanone (3300)
Tetrachloroethene (160)
Toluene (1900)
Ethylbenzene (760)
Xylenes (2600)

BH00057GA Dup of 56 (Soil)
70295

Methylene Chloride (2000)
Acetone (2700)
1,1-Dichloroethene (650)
1,1-Dichloroethane (370)
1,1,1-Trichloroethane (680)
Trichloroethene (700)
4-Methyl-2-Pentanone (2300)
Tetrachloroethene (47)
Toluene (830)
Ethylbenzene (80)
Xylenes (400)

BH00058GA Rinse (70295)

nothing found

42000
ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1742

DATE: 8/7/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 1 sample for "CLP" volatile organic screening.

Date Sampled: 8/1/95

ANALYSIS RESULTS

The following sample was screened for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. 100 ul of this extract was injected into 5 mls of deionized water and purged and analyzed. The final dilution factor is 500:1. **SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).**

SAMPLE ID

BH00054GA

70295 - Soil

ANALYTES IDENTIFIED

42000✓	Acetone (42)	27
1000✓	1,1-Dichloroethane (1)	2.1
~3000✓	1,1,1-Trichloroethane (23)	6
1000✓	Trichloroethene (1)	3
1000✓	Tetrachloroethene (1)	
3000✓	4-Methyl-2-Pentanone (3)	4
13000✓	Toluene (13)	5
5000✓	Ethylbenzene (5)	2.3
24000✓	Xylenes (24)	8

VOA Screen

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1742

DATE: 8/4/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 4 samples for volatile organic screening.

Date Sampled: 8/2/95

ANALYSIS RESULTS

The following samples were screened for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. Approximately 1 ml (or 1 gr) of sample was purged and analyzed. A list of analytes screened is attached. Since the samples were screened only, there are estimated quantitations (PPB) noted. It can be assumed that detection limits are in the low (5-15) part per billion (PPB) range.

SAMPLE IDANALYTES IDENTIFIED

BH00059GA 70295 soil

Methylene Chloride (1000)
Acetone (1700)
1,1-Dichloroethene (50)
1,1-Dichloroethane (65)
1,1,1-Trichloroethane (100)
Trichloroethene (50)
4-Methyl-2-Pentanone (1200)
Toluene (85)
Xylenes (35)

BH00060GA 70395 soil

Acetone (220)
1,1-Dichloroethane (400)
1,1,1-Trichloroethane (3700)
Tetrachloroethene (1300)
Toluene (500)
Ethylbenzene (70)
Xylenes (700)

BH00061GA water sample
70395

Methylene Chloride (420)
Acetone (140)
1,1-Dichloroethene (550)
1,1-Dichloroethane (4800)
1,1,1-Trichloroethane (12,000)
Trichloroethene (580)
1,1,2-Trichloroethane (140)
Tetrachloroethene (2100)
Toluene (2600)
Ethylbenzene (210)
Xylenes (2100)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

BH00062GA

Methylene Chloride (300)
Acetone (460)
1,1-Dichloroethene (125)
1,1-Dichloroethane (725)
1,1,1-Trichloroethane (4600)
Trichloroethene (800)
1,1,2-Trichloroethane (80)
4-Methyl-2-Pentanone (1350)
Tetrachloroethene (1000)
Toluene (3100)
Ethylbenzene (550)
Xylenes (2900)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1742

DATE: 8/7/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 3 samples for volatile organic screening.

Date Sampled: 8/2/95

ANALYSIS RESULTS

The following samples were screened for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. Approximately 1 ml (or 1 gr) of sample was purged and analyzed. A list of analytes screened is attached. Since the samples were screened only, there are estimated quantitations (PPB) noted. It can be assumed that detection limits are in the low (5-15) part per billion (PPB) range.

SAMPLE ID

BH00063GA

soil

6.5-6.8

BH00064GA

soil

7.0-7.4

ANALYTES IDENTIFIED

✓
Methylene Chloride (70)
Acetone (360)
1,1-Dichloroethene (55)
1,1-Dichloroethane (65)
1,1,1-Trichloroethane (1600)
Trichloroethene (140)
Tetrachloroethene (340)
4-Methyl-2-Pentanone (2100)
Toluene (700)
Ethylbenzene (125)
Xylenes (750)

Methylene Chloride (475)
Acetone (675)
1,1-Dichloroethene (460)
1,1-Dichloroethane (700)
1,1,1-Trichloroethane (8500)
Trichloroethene (800)
Tetrachloroethene (4700)
Toluene (4000)
Ethylbenzene (1500)
Xylenes (7700)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

BH00065GA

S.1 85-90

Methylene Chloride (1900)
Acetone (345)
1,1-Dichloroethene (370)
1,1-Dichloroethane (1200)
1,1,1-Trichloroethane (3000)
Trichloroethene (1000)
1,1,2-Trichloroethane (55)
4-Methyl-2-Pentanone (8200)
Tetrachloroethene (300)
Toluene (3400)
Ethylbenzene (350)
Xylenes (2000)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1742

DATE: 8/8/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 3 samples for "CLP" volatile organic screening.

Date Sampled: 8/2/95

CLP / PPM units

ANALYSIS RESULTS

The following samples were screened for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. 100 ul of this extract was injected into 5 mls of deionized water and purged and analyzed. The final dilution factor is 500:1. SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).

SAMPLE IDANALYTES IDENTIFIED

BH00060GA

7.395
4.2-4.4

Methylene Chloride (108)
1,1,1-Trichloroethane (4)
Tetrachloroethene (3.5)
Toluene (.77)
Xylenes (2.2)

BH00062GA

7.395
5.0-5.65

Methylene Chloride (108)
Tetrachloroethene (.96)
Toluene (.99)
Ethylbenzene (.84)
Xylenes (6.6)

BH00064GA

7.395
7.0-7.4

Methylene Chloride (101)
1,1,1-Trichloroethane (.5)
Tetrachloroethene (.6)
Toluene (.6)
Xylenes (1.4)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1748
DATE: 8/8/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 3 samples for volatile organic screening.

Date Sampled: 8/2/95

Screen / PPB units

ANALYSIS RESULTS

The following samples were analyzed for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was purged and analyzed. SAMPLE RESULTS ARE REPORTED IN PPB (UG/KG)

SAMPLE ID

BH00066GA

5-11 70315
9.55-9.9 70495

ANALYTES IDENTIFIED

Methylene Chloride (52)
1,1-Dichloroethene (27)
1,1-Dichloroethane (43)
1,1,1-Trichloroethane (260)
Trichloroethene (36)
Tetrachloroethene (57)
4-Methyl-2-Pentanone (25)
Toluene (65)
Ethylbenzene (11)
Xylenes (155)

BH00069GA

6.4-6.8
5.614 70495
5.614

Methylene Chloride (37)
Acetone (26)
1,1-Dichloroethene (55)
1,1-Dichloroethane (70)
1,1,1-Trichloroethane (1200)
Trichloroethene (74)
4-Methyl-2-Pentanone (175)
Tetrachloroethene (220)
Toluene (290)
Ethylbenzene (50)
Xylenes (325)

ANALYTICAL REPORT

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1748

DATE: 8/8/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 2 samples for "CLP" volatile organic screening.

Date Sampled: 8/2/95

CLP / PPM units

ANALYSIS RESULTS

The following samples were analyzed for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. 100 ul of this extract was injected into 5 mls of deionized water and purged and analyzed. The final dilution factor is 1:500. **SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).**

SAMPLE ID

BH00067GA

70495
4.0-4.35

BH00068GA

70495
5.5-5.9

ANALYTES IDENTIFIED

1,1,1-Trichloroethane (7)
Tetrachloroethene (10)
Toluene (2)
Ethylbenzene (1.3)
Xylenes (9.6)

1,1,1-Trichloroethane (15)
Trichloroethene (1)
Tetrachloroethene (19)
Toluene (4.3)
Ethylbenzene (4.3)
Xylenes (23)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

P.O. BOX 464

GOLDEN, COLORADO 80402

GENERAL LABORATORY

BUILDING 881

LAB NUMBER: 95E1748

DATE: 8/7/95

File

APPROVED:


N. C. StonerSAMPLE DESCRIPTION 3 samples for volatile organic screening.

Date Sampled: 8/2/95

ANALYSIS RESULTS

The following samples were screened for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. Approximately 1 ml (or 1 gr) of sample was purged and analyzed. A list of analytes screened is attached. Since the samples were screened only, there are estimated quantitations (PPB) noted. It can be assumed that detection limits are in the low (5-15) part per billion (PPB) range.

SAMPLE IDANALYTES IDENTIFIED

BH00070GA

7.35 - 8.0
70495
50.1

Methylene Chloride (400)
Acetone (350)
1,1-Dichloroethane (400)
1,1,1-Trichloroethane (2300)
Trichloroethene (140)
Tetrachloroethene (100)
4-Methyl-2-Pentanone (2700)
Toluene (300)
Ethylbenzene (20)
Xylenes (900)

BH00071GA

7.35 - 8.0
70495
50.1

Methylene Chloride (470)
Acetone (170)
1,1-Dichloroethene (100)
1,1-Dichloroethane (2500)
1,2-Dichloroethane (1300)
1,1,1-Trichloroethane (12,600)
Trichloroethene (3500)
Tetrachloroethene (3800)
4-Methyl-2-Pentanone (800)
Toluene (5500)
Ethylbenzene (3800)
Xylenes (5600)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

BH00072GA *Riase*

Tetrachloroethene (15)
Toluene (15)
Xylenes (18)

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

Scrm/PPB

BH00073GA

*8.4-8.7
70495
Soil*

Methylene Chloride (83)
Acetone (270)
1,1-Dichloroethene (29)
1,1-Dichloroethane (68)
1,1,1-Trichloroethane (140)
Trichloroethene (12)
4-Methyl-2-Pentanone (2300)
Toluene (42)

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1757

DATE: 8/8/95

File

APPROVED: N.C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 1 sample for "CLP" volatile organic screening.

Date Sampled: 8/7/95

Seven / PPM

ANALYSIS RESULTS

The following sample was analyzed for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. 1 ul of this extract was injected into 5 mls of deionized water and purged and analyzed. The final dilution factor is 1:50,000. SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).

SAMPLE ID

BH00074GA

Liquid

70555
2.9-3.5

ANALYTES IDENTIFIED

Acetone (285)
1,1-Dichloroethene (265)
1,1-Dichloroethane (2023)
14. 1,1,1-Trichloroethane (140,000)
Trichloroethene (2400)
12. Tetrachloroethene (128,900)
1.7 4-Methyl-2-Pentanone (17,650)
6.0 Toluene (60,000)
7 Ethylbenzene (7350)
3.9 Xylenes (39,500)

398,373 / 1,000,000 = 40%

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1770

DATE: 8/15/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 5 samples for "CLP" volatile organic screening.

Date Sampled: 8/8/95

ANALYSIS RESULTS

The following samples were analyzed for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. 10 ul of this extract was diluted in 990 ul of methanol. 10 ul of the dilution was then injected into 5 mls of deionized water and purged and analyzed. The final dilution factor is 1:500,000. SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).

SAMPLE ID

BH00075GA

3.5-3.6 soil
70515

BH00076GA

soil 5.0 5.5
70685

BH00077GA

soil 5.5 6.0
70695

BH00078GA

water 5.0-6.0
70695

BH00079GA

soil 5.5-6.0 507 ppm
70795ANALYTES IDENTIFIED

*1,1,1-Trichloroethane (915) 915,000
*Tetrachloroethene (6800) 6,800,000
Toluene (765)

1,1,1-Trichloroethane (11000)
Tetrachloroethene (25000)
Toluene (3500)
Xylenes (1450)

1,1,1-Trichloroethane (5000)
Tetrachloroethene (14500)
Toluene (2000)
Xylenes (850)

Methylene Chloride (2890)
1,1,1-Trichloroethane (13000)
Tetrachloroethene (27000)
Toluene (4000)
Ethylbenzene (375)
Xylenes (2100)

Methylene Chloride (72)
Acetone (22)
1,1-Dichloroethane (4.3)
1,1,1-Trichloroethane (260)
Trichloroethene (42)
Tetrachloroethene (199)
Toluene (80)
Ethylbenzene (14)
Xylenes (83)

Post-It® Fax Note 7671		Date 8-15-95	# of pages 1
To Robin Volk	From N. Stoner		
Co./Dept.	Co. Lab		
Phone #	Phone # 4289		
Fax # 8663	Fax #		

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1774

DATE: 8/15/95

File

APPROVED: N. C. Stoner

N. C. Stoner

SAMPLE DESCRIPTION 3 samples for "CLP" volatile organic screening.

Date Sampled: 8/9/95

ANALYSIS RESULTS

The following samples were analyzed for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. Various aliquots of the extract were injected into 5 mls of de-ionized water and analyzed. **SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).**

SAMPLE IDANALYTES IDENTIFIED

BH00081GA 70995 soil 7.1-7.75

1,1,1-Trichloroethane (95)
Tetrachloroethene (690)
Toluene (86)
Ethylbenzene (9)
Xylenes (100)

BH00082GA Dup 70995 6.5-7.1

Methylene Chloride (26)
Trichloroethene (0.4)
Tetrachloroethene (0.3)
Toluene (0.4)

BH00083GA 71095 7.3-7.6

Methylene Chloride (2.8)
Toluene (0.3)

Post-It® Fax Note		7671	
To	Jeff Bray	Date	8-17-95
Co./Dept.		From	Norm Stoner
Phone #		Co.	
Fax #	8663	Phone #	4289
		Fax #	

ANALYTICAL REPORT

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

LAB NUMBER: 95E1774

DATE: 8/17/95

File

APPROVED: N. C. Stoner

N. C. Stoner
N. C. Stoner

SAMPLE DESCRIPTION 5 samples for "CLP" volatile organic screening.

Date Sampled: 8/9/95

ANALYSIS RESULTS

The following samples were analyzed for volatile organics using Purge and Trap Gas Chromatography/ Mass Spectrometry. 1 gr of sample was extracted with 10 mls of methanol. Various aliquots of the extract were injected into 5 mls of de-ionized water and analyzed. SAMPLE RESULTS ARE REPORTED IN PPM (MG/KG).

SAMPLE IDANALYTES IDENTIFIED

BH00080GA

70895 S.1 7.55-7.9 -

Methylene Chloride (41)
Tetrachloroethene (0.3)
Toluene (0.4)

BH00084GA

71195 S.1 7.1-7.75

Tetrachloroethene (0.6)

BH00085GA

71295 6.0-6.5

Methylene Chloride (0.3)
Benzene (0.3)
Tetrachloroethene (0.4)

BH00086GA

6.0-6.5

nothing detected

BH00087GA

71395 7.2-7.7

Tetrachloroethene (0.6)

~~XXXXXXXXXXXXXXXXXXXX~~

Post-it® Fax Note 7671		Date 8-15-95	# of pages 1
To Robin Volk	From N. Stoner		
Co./Dept.	Co. Lab		
Phone #	Phone # 4289		
Fax # 8663	Fax #		

RYAN'S PIT

(IHSS 109)

OPERABLE UNIT 2

- Sampling Types
- Borehole
 - ▲ Groundwater Well
 - ◆ Characterization Boreholes
 - Phase 2 Characterization Boreholes
 - Soil/Gas Locations

- Standard Map Features
- IHSS Boundary
 - Trench Boundary
 - - - - - Fences

DATA SOURCE:

Buildings, roads and fences provided by
Facilities Engineering
EG&G Rocky Flats, Inc. - 1991

Hydrology provided by USGS -
(date unknown)

Electromagnetic data provided by
Woodward-Clyde - June, 1995

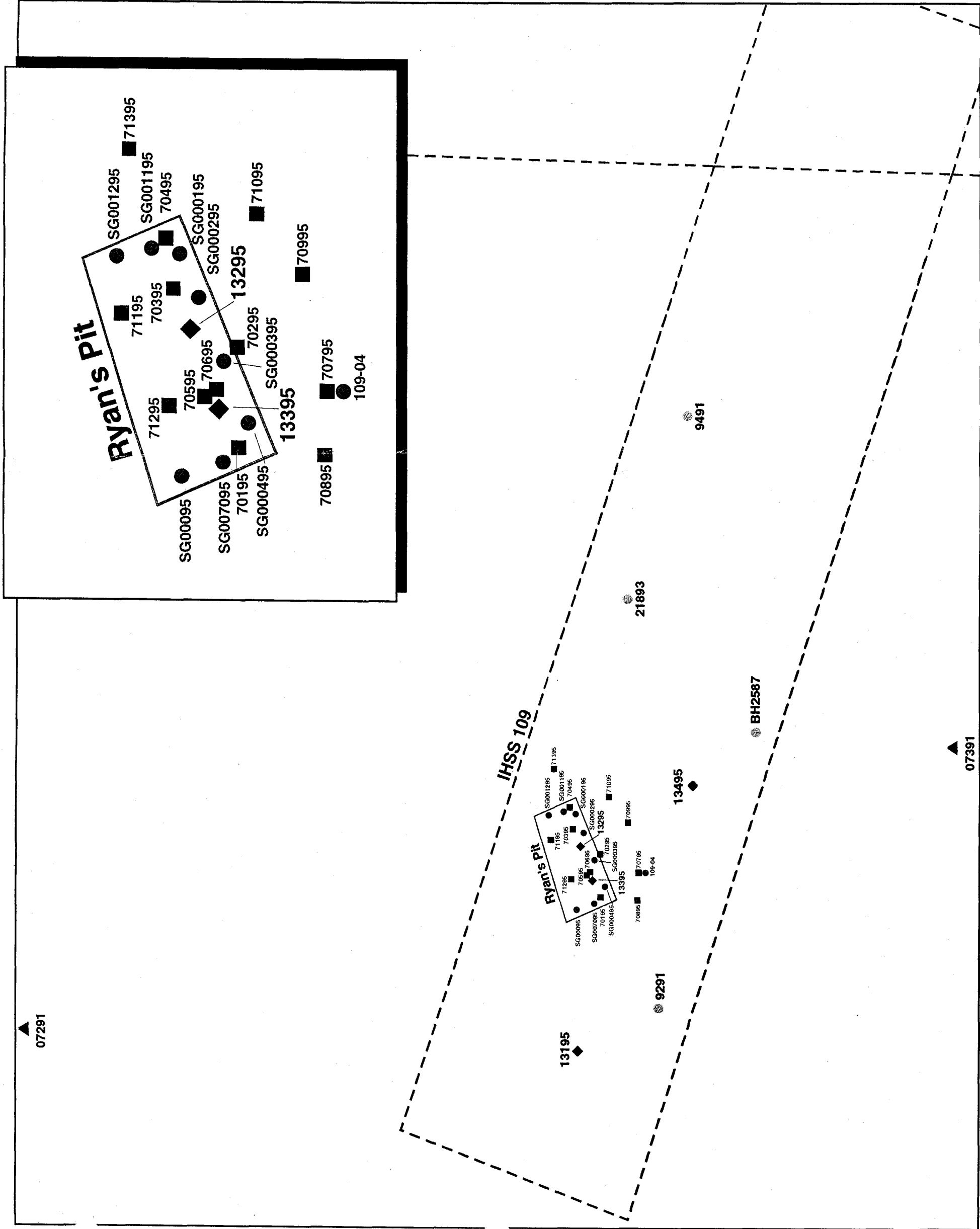
U. S. Department of Energy
Rocky Flats Environmental
Technology Site



Geographic Information Systems Group

Map ID: ***Draft***

August, 1995



RYAN'S PIT

(IHSS 109)

OPERABLE UNIT 2

Preliminary Sampling Results

Volatile Organic Screening

Sampling Types

- Borehole
- ▲ Groundwater Well
- ◆ Characterization Boreholes
- Phase 2 Characterization Boreholes
- Soil/Gas Locations

Standard Map Features

- IHSS Boundary
- Trench Boundary
- Fences

DATA SOURCE:

Buildings, roads and fences provided by
Facilities Engineering
EG&G Rocky Flats, Inc. - 1991

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Woodward-Clyde - June, 1995

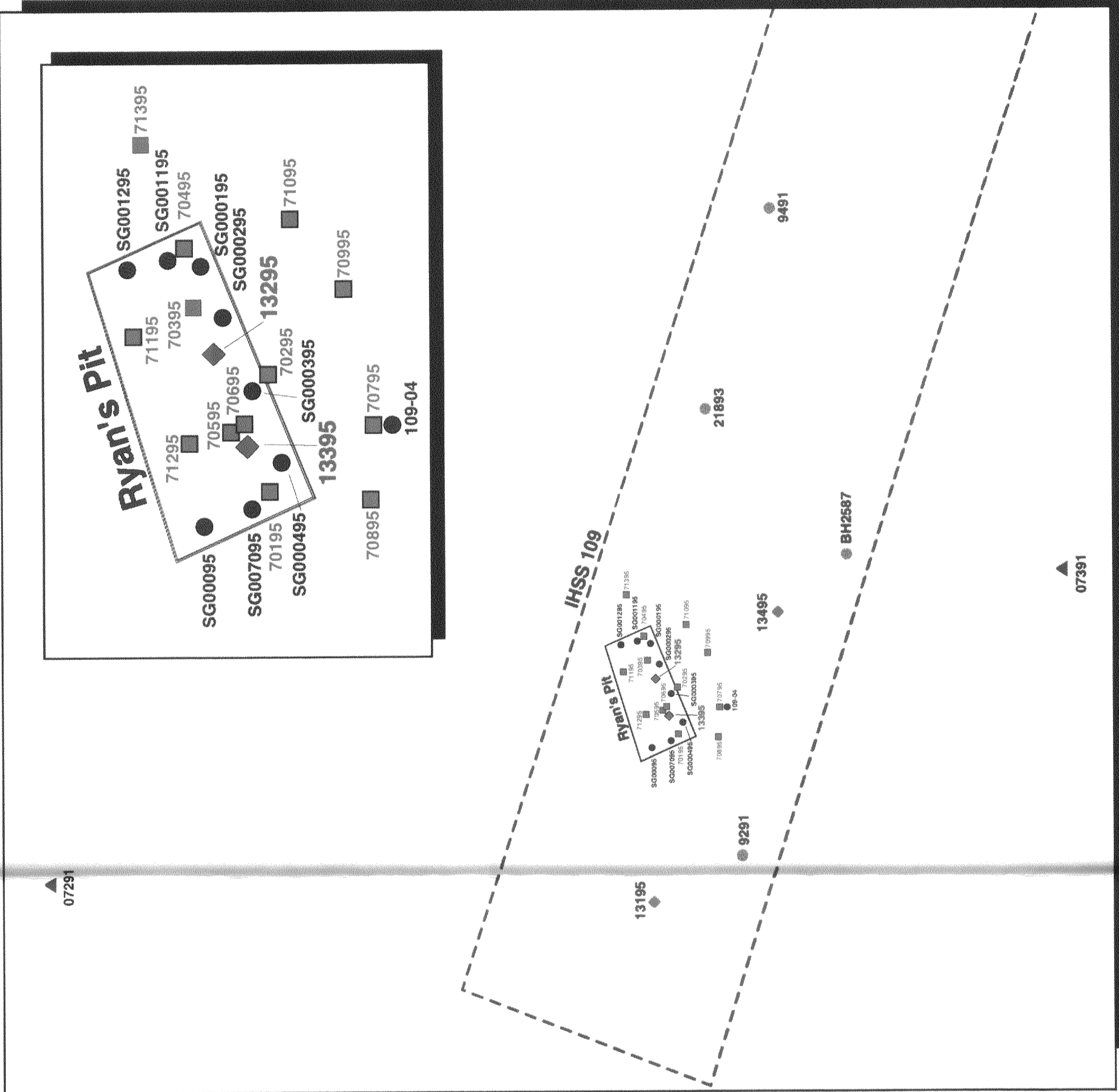
U. S. Department of Energy
Rocky Flats Environmental
Technology Site



Geographic Information Systems Group

Map ID: ***Draft***

August, 1995



Depth	Analyte	Result	Unit Measure	Qualifier
70195 4.0-4.6	Methylene Chloride	50	ug/kg	soil
	Acetone	400	ug/kg	soil
	1,1-Dichloroethane	240	ug/kg	soil
	1,1,1-Trichloroethane	1050	ug/kg	soil
	Trichloroethene	670	ug/kg	soil
	Tetrachloroethene	460	ug/kg	soil
	Xylenes	85	ug/kg	soil
70295 2.0-2.25	Acetone	16000	ug/kg	soil
	1,1-Dichloroethane	700	ug/kg	soil
	1,1,1-Trichloroethane	1300	ug/kg	soil
	Trichloroethene	200	ug/kg	soil
	4-Methyl-2-Pentanone	3000	ug/kg	soil
	Tetrachloroethene	315	ug/kg	soil
	Toluene	1600	ug/kg	soil
	Ethylbenzene	240	ug/kg	soil
	Xylenes	1300	ug/kg	soil
4.0-4.7	Acetone	15000	ug/kg	soil
	1,1-Dichloroethane	400	ug/kg	soil
	1,1,1-Trichloroethane	1800	ug/kg	soil
	Trichloroethene	900	ug/kg	soil
	4-Methyl-2-Pentanone	1700	ug/kg	soil
	Toluene	900	ug/kg	soil
	1,1,1-Trichloroethane	220	ug/kg	soil
	Ethylbenzene	900	ug/kg	soil
	Xylenes	740	ug/kg	soil
5.0-5.6	Methylene Chloride	740	ug/kg	soil
	Acetone	27000	ug/kg	soil
	1,1-Dichloroethane	2100	ug/kg	soil
	1,1-Dichloroethene	500	ug/kg	soil
	1,1,1-Trichloroethane	6000	ug/kg	soil
	1,2-Dichloropropane	300	ug/kg	soil
	Trichloroethene	3000	ug/kg	soil
	4-Methyl-2-Pentanone	4000	ug/kg	soil
	Tetrachloroethene	900	ug/kg	soil
	Toluene	5000	ug/kg	soil
	Ethylbenzene	2300	ug/kg	soil
	Xylenes	8000	ug/kg	soil
6.0-6.6	Methylene Chloride	430	ug/kg	soil
	Acetone	3900	ug/kg	soil
	1,1-Dichloroethane	140	ug/kg	soil
	1,1,1-Trichloroethane	320	ug/kg	soil
	Trichloroethene	140	ug/kg	soil
	4-Methyl-2-Pentanone	2700	ug/kg	soil
	Toluene	190	ug/kg	soil
	Xylenes	140	ug/kg	soil
7.56-8.2	Methylene Chloride	1200	ug/kg	soil
	Acetone	14000	ug/kg	soil
	1,1-Dichloroethane	240	ug/kg	soil
	1,1-Dichloroethene	380	ug/kg	soil
	1,1,1-Trichloroethane	2300	ug/kg	soil

Depth	Analyte	Result	Unit Measure	Qualifier
70395 4.2-4.4	Acetone	220	ug/kg	soil
	1,1-Dichloroethane	400	ug/kg	soil
	1,1,1-Trichloroethane	3700	ug/kg	soil
	Tetrachloroethene	1300	ug/kg	soil
	Toluene	500	ug/kg	soil
	Ethylbenzene	70	ug/kg	soil
	Xylenes	700	ug/kg	soil
4.5-5.0	Methylene Chloride	420	ug/kg	water
	Acetone	140	ug/kg	water
	1,1-Dichloroethane	550	ug/kg	water
	1,1-Dichloroethene	4800	ug/kg	water
	1,1,1-Trichloroethane	12000	ug/kg	water
	Trichloroethene	580	ug/kg	water
	1,1,2-Trichloroethane	140	ug/kg	water
	Tetrachloroethene	2100	ug/kg	water
	Toluene	2600	ug/kg	water
	Ethylbenzene	210	ug/kg	water
	Xylenes	2100	ug/kg	water
5.0-5.7	Methylene Chloride	300	ug/kg	soil
	Acetone	460	ug/kg	soil
	1,1-Dichloroethane	125	ug/kg	soil
	1,1-Dichloroethene	725	ug/kg	soil

Depth	Analyte	Result	Unit Measure	Qualifier
70495 6.4-6.8	Methylene Chloride	37	ug/kg	soil
	Acetone	26	ug/kg	soil
	1,1-Dichloroethane	55	ug/kg	soil
	1,1-Dichloroethene	70	ug/kg	soil
	1,1,1-Trichloroethane	1200	ug/kg	soil
	Trichloroethene	74	ug/kg	soil
	4-Methyl-2-Pentanone	175	ug/kg	soil
	Tetrachloroethene	220	ug/kg	soil
	Toluene	290	ug/kg	soil
	Ethylbenzene	30	ug/kg	soil
	Xylenes	325	ug/kg	soil
7.35-8.0	Methylene Chloride	400	ug/kg	soil
	Acetone	350	ug/kg	soil
	1,1-Dichloroethane	400	ug/kg	soil
	1,1,1-Trichloroethane	2300	ug/kg	soil
	Trichloroethene	140	ug/kg	soil
	Tetrachloroethene	100	ug/kg	soil
	Toluene	2700	ug/kg	soil
	4-Methyl-2-Pentanone	300	ug/kg	soil
	Ethylbenzene	20	ug/kg	soil
	Xylenes	900	ug/kg	soil
7.35-8.0	Methylene Chloride	470	ug/kg	soil
	Acetone	170	ug/kg	soil
	1,1-Dichloroethane	100	ug/kg	soil
	1,1-Dichloroethene	2500	ug/kg	soil
	1,2-Dichloroethane	1300	ug/kg	soil
	1,1,1-Trichloroethane	12600	ug/kg	soil
	Trichloroethene	3500	ug/kg	soil
	Tetrachloroethene	3800	ug/kg	soil
	4-Methyl-2-Pentanone	800	ug/kg	soil
	Toluene	5500	ug/kg	soil
	Ethylbenzene	3800	ug/kg	soil
	Xylenes	5600	ug/kg	soil
8.4-8.7	Methylene Chloride	83	ug/kg	soil
	Acetone	270	ug/kg	soil
	1,1-Dichloroethane	29	ug/kg	soil
	1,1-Dichloroethene	68	ug/kg	soil
	1,1,1-Trichloroethane	140	ug/kg	soil
	Trichloroethene	12	ug/kg	soil
	4-Methyl-2-Pentanone	2300	ug/kg	soil
	Toluene	42	ug/kg	soil

RYAN'S PIT (IHSS 109)

OPERABLE UNIT 2 CONTAMINANTS OF CONCERN

- Sampling Types
- Borehole
 - ▲ Groundwater Well
 - ◆ Characterization Boreholes
 - Phase 2 Characterization Boreholes

Standard Map Features

- IHSS Boundary
- Trench Boundary
- Fences

BH13195				
Depth	Analyte	Result	Unit Measure	Qualifier
3'-5'	1,1-Dichloroethene	6.00E+00	ug/kg	U
3'-5'	Bis(2-Ethylhexyl)Phthalate	6.20E+01	ug/kg	J
3'-5'	Carbon Tetrachloride	6.00E+00	ug/kg	U
3'-5'	Chloroform	6.00E+00	ug/kg	U
3'-5'	Methylene Chloride	1.30E+01	ug/kg	B
3'-5'	Tetrachloroethene	1.00E+00	ug/kg	J
3'-5'	Trichloroethene	2.00E+00	ug/kg	J
3'-5'	Vinyl Chloride	1.30E+01	ug/kg	U
9'-11'	1,1-Dichloroethene	6.00E+00	ug/kg	U
9'-11'	Bis(2-Ethylhexyl)Phthalate	4.10E+02	ug/kg	U
9'-11'	Carbon Tetrachloride	6.00E+00	ug/kg	U
9'-11'	Chloroform	6.00E+00	ug/kg	U
9'-11'	Methylene Chloride	1.40E+01	ug/kg	B
9'-11'	Tetrachloroethene	6.00E+00	ug/kg	U
9'-11'	Trichloroethene	6.00E+00	ug/kg	U
9'-11'	Vinyl Chloride	1.20E+01	ug/kg	U

BH13295				
Depth	Analyte	Result	Unit Measure	Qualifier
3'-5'	1,1-Dichloroethene	1.50E+04	ug/kg	U
3'-5'	Bis(2-Ethylhexyl)Phthalate	4.00E+02	ug/kg	U
3'-5'	Carbon Tetrachloride	1.50E+04	ug/kg	U
3'-5'	Chloroform	1.50E+04	ug/kg	U
3'-5'	Methylene Chloride	8.90E+03	ug/kg	BU
3'-5'	Tetrachloroethene	1.80E+04	ug/kg	A
3'-5'	Trichloroethene	5.00E+04	ug/kg	D
3'-5'	Vinyl Chloride	3.00E+04	ug/kg	U
8'-10'	1,1-Dichloroethene	8.80E+02	ug/kg	U
8'-10'	Bis(2-Ethylhexyl)Phthalate	2.60E+03	ug/kg	JA
8'-10'	Carbon Tetrachloride	8.80E+02	ug/kg	U
8'-10'	Chloroform	8.80E+02	ug/kg	U
8'-10'	Methylene Chloride	1.40E+04	ug/kg	BE
8'-10'	Tetrachloroethene	8.80E+02	ug/kg	U
8'-10'	Trichloroethene	8.80E+02	ug/kg	U
8'-10'	Vinyl Chloride	1.80E+03	ug/kg	U

BH13395				
Depth	Analyte	Result	Unit Measure	Qualifier
3'-5'	1,1-Dichloroethene	2.50E+04	ug/kg	U
3'-5'	Bis(2-Ethylhexyl)Phthalate	3.20E+04	ug/kg	D
3'-5'	Carbon Tetrachloride	2.50E+04	ug/kg	U
3'-5'	Chloroform	2.50E+04	ug/kg	U
3'-5'	Methylene Chloride	2.50E+04	ug/kg	B
3'-5'	Tetrachloroethene	4.70E+05	ug/kg	U
3'-5'	Trichloroethene	1.90E+04	ug/kg	J
3'-5'	Vinyl Chloride	4.90E+04	ug/kg	U
8'-10'	1,1-Dichloroethene	7.60E+02	ug/kg	U
8'-10'	Bis(2-Ethylhexyl)Phthalate	4.00E+02	ug/kg	U
8'-10'	Carbon Tetrachloride	7.60E+02	ug/kg	U
8'-10'	Chloroform	7.60E+02	ug/kg	U
8'-10'	Methylene Chloride	1.20E+03	ug/kg	BU
8'-10'	Tetrachloroethene	7.60E+02	ug/kg	U
8'-10'	Trichloroethene	7.60E+02	ug/kg	U
8'-10'	Vinyl Chloride	1.50E+03	ug/kg	U

BH13495				
Depth	Analyte	Result	Unit Measure	Qualifier
3'-5'	1,1-Dichloroethene	7.00E+00	ug/kg	J
3'-5'	Bis(2-Ethylhexyl)Phthalate	5.00E+01	ug/kg	U
3'-5'	Carbon Tetrachloride	6.00E+00	ug/kg	U
3'-5'	Chloroform	6.00E+00	ug/kg	U
3'-5'	Methylene Chloride	1.70E+01	ug/kg	B
3'-5'	Tetrachloroethene	1.80E+01	ug/kg	U
3'-5'	Trichloroethene	1.30E+02	ug/kg	U
3'-5'	Vinyl Chloride	1.10E+01	ug/kg	U
8'-10'	1,1-Dichloroethene	3.00E+01	ug/kg	U
8'-10'	Bis(2-Ethylhexyl)Phthalate	8.30E+01	ug/kg	J
8'-10'	Carbon Tetrachloride	3.00E+01	ug/kg	U
8'-10'	Chloroform	3.00E+01	ug/kg	U
8'-10'	Methylene Chloride	2.70E+01	ug/kg	BU
8'-10'	Tetrachloroethene	3.00E+01	ug/kg	U
8'-10'	Trichloroethene	6.30E+02	ug/kg	U
8'-10'	Vinyl Chloride	6.00E+01	ug/kg	U

